

Frigidaire Makes Plans for Showing

(Concluded from Page 1, Column 1)

Employees' Association who, in a ringing speech to the assembled sales organization, created still another slogan: "Frigidaire from contented workmen."

Throughout the audience at the convention were scattered prominent factory employees, who thus had an opportunity to see the lengths the home office and field force go to sell the machines they make, thereby keeping the workmen employed.

Dramatic sketches and movies took up most of the meeting. There were fiery speeches by Vice President H. W. Newell, Salesmanager F. R. Pierce, Advertising Manager Earl Doty, Air Conditioning Manager Jim Nance, "Army" Ambrose, and Ellsworth Gilbert. But most of the 1934 sales story was told by the last-named two gentlemen, who presented a running play of 23 acts and 147 scenes—at least, it seemed that many—demonstrating in unforgettable form just what the factory expects the field to do this spring, and how it should be done.

Frigidaire Spring Showings will be held again this year in 6,000 showrooms made cheerful and inviting with settings of Spring-y flowers and birds, done in bright colors.

At these showings free "Lucky Clover Leaf" beverage trays, recessed to hold tall glasses, will be given prospects who hear the Frigidaire demonstration and write on a card what feature of the '34 Frigidaire they like best. Factory men call this "demonstration insurance."

A ready-mixed, quick-working frozen dessert mix for use in demonstrations is also ready for distributors and dealers. The big idea of this year's Frigidaire campaign is to make demonstrations, so that prospects may see the difference between a Frigidaire '34 and "old-fashioned" electric refrigerators.

An advertising appropriation twice as large as that of 1933 will be spread out over national magazines, newspapers, billboards, direct mail, and radio by Advertising Manager Earl Doty, who estimates that 1,500,000,000 Frigidaire advertising messages will be turned out during the year.

At the closing of the convention an informal and very human touch was lent by Distributor J. J. Pocock of Philadelphia when he stepped up to the platform to congratulate Salesmanager Frank Pierce—who used to be Mr. Pocock's salesmanager in Philadelphia—on his work.

Pictures taken from the audience during the performance of Frigidaire's "big show" are reproduced on page 1 of this issue. More are scheduled for publication later.

Adkins and Conkey To Sell 'Frostoffs'

(Concluded from Page 1, Column 2)

bury clock, and a relay which interrupts the flow of current into a household refrigerator long enough to permit defrosting without melting ice cubes or raising the temperature of the refrigerator over 4° F. It is adjustable to the size of any refrigerator using 110 volt, 60 cycle current.

Mr. Conkey claims the Frostoff will reduce operating costs of a refrigerator because it keeps the evaporator free of frost, hence less refrigeration is needed to maintain proper cabinet temperatures. He also says the Frostoff eliminates sticking, frozen-in ice trays.

The Frostoff is plugged into the wall or floor socket, and the refrigerator plugged in the Frostoff mechanism. Once the dial is set, defrosting takes place automatically every 24 hours. It is approved by the Underwriters' Laboratories, and is manufactured by the Waterbury Clock Co. under General Electric and Warren patents.

G-E Distributors Will Open 66-Day Drive On March 15

(Concluded from Page 1, Column 5)

ness barometer indicated bad weather ahead. The red light was on!

"Again, a year ago, I suggested we proceed with caution because the clouds had not lifted enough to give us a clear view of the business horizon. The yellow light was flashing!"

"This year I sincerely believe we are heading into a profitable refrigerator selling season. It is no longer considered smart to put off buying. It is considered not only smart but patriotic to buy now—and people want refrigerators. They want quality. They want style. The green light is up!"

Manager Zimmerman urged his specialty appliance distributors to concentrate on refrigeration during the 66 days between March 15 and May 19, and to adopt the outlined program as only the minimum of their activity in that period.

"In April of 1931," said Sales Manager Sweeney, "your organizations rolled up the tremendous sales total of \$9,000,000 in one month—and that's figured at wholesale prices, not retail. Ahead is a straight-away stretch that will determine the 1934 race. Let's cut loose and give 'em a ride."

During the 66 days, magazine advertising on the G-E refrigerator will total approximately 40,000,000 potential impressions through the combined circulation of the general magazines employed. All forms of sales promotion will be made available to distributors, such as outdoor posters, newspaper advertising, radio, displays, publicity, direct mail, door openers, contests, and sales helps, according to W. J. Daily, sales promotion manager.

Sign Voluntary Pledges

At the conclusion of the convention, distributors voluntarily signed pledges, addressed to Manager Zimmerman, in which they promised to adopt the entire 66-day drive program, with additional expenditures and effort on their part to promote sales by retail outlets.

Every part of the 66-day campaign is scheduled as carefully as a professional baseball team's season. On March 15, the opening day of the drive, distributors will blanket their territory with outdoor posters. New posters will go up May 1. They will be used especially to reach the small towns. The minimum for representative coverage is a half showing.

Newspaper Advertising

As to newspaper advertising, the first of the campaign series is scheduled for March 15, another March 20, March 23, March 28 and so on. In key cities, the minimum schedule calls for 90 inches per week, beginning March 15.

Two 60-inch advertisements per week, or the equivalent, are recommended. In major dealer towns the minimum is 60 inches during March and 30 inches per week during April and May. In small towns where the quota budget is smaller, the minimum newspaper schedule calls for 60% of the year's schedule during the period of the campaign.

Distributors are now arranging for local radio station "spot" broadcasting, using a minimum of three five-minute programs a week, or the equivalent in one-minute flash announcements. Five-minute continuities and one-minute "spot" announcements will be supplied to distributors and dealers.

One window display has been scheduled for the beginning of March and another for March 19; all dealers being urged to feature both displays. Publicity stories will be scheduled during the campaign, while particular emphasis will be given to obtaining cooperation of department stores in newspaper space, window displays, spot floor displays, radio announce-

ments and special department store activities.

Jean Abbey, Woman's Home Companion Radio Shopper, will broadcast from many major stores and discuss General Electric refrigerators and kitchens. A Stensgaard Travelling Display for department stores has been made available, as well as other sales helps for this type of outlet.

Direct mail has been scheduled for March 20, March 26, and later dates. These mailings will be timed to tie in with other promotional and sales effort. The G-E sales coaches will be scheduled for a definite route by each distributor for every day of the campaign, first routings being in the smaller towns.

Promotional Activities

Beginning March 20 and continuing throughout the entire 66 days, special promotional activities will be arranged, such as cooking schools, home service demonstrations in stores, style shows, local prize letter contests, tie-ins with films showing G-E refrigerators and displays of refrigerators in theater lobbies; as well as the showing of "Just Around the Corner," the G-E kitchen movie which features widely known movie celebrities.

Distributors pledged themselves to use adequate supplies of sales literature, such as the "Freedom" booklets, recipe booklets, budget book, envelope enclosures, and such doors openers as playing cards, bridge score pads, aprons, water bottles—all of which carry refrigerator advertising.

Dealer meetings will be conducted during the week of March 12 to present the plans of the spring campaign. Every new salesman will be put through a four-day training course following the meeting, and most salesmen will be enrolled in the G-E LaSalle training course, as well. Morning sales meetings will be scheduled.

Tying in with the 66-day activity will be the new spring sales contest. This contest formally opens in the south on March 19 and carries through to May 19; in the north on April 2 and closing on June 2.

Prizes will be awarded 11 distributors, two commercial sales managers, two apartment house sales managers, two wholesale sales managers, two retail sales managers, two retail salesmen, two retail supervisors, two district managers, two utility merchandise managers, two dealers, two sales promotion managers.

All of the winners will be brought to Cleveland for the annual summer convention of the company's specialty appliance sales department.

Selected Magazines

Among the magazines which will carry the General Electric home appliance story, as announced by Mr. Daily, are *House & Garden*, *Home & Field*, *Spur*, *Town & Country*, *Country Life*, *Fortune*, *Time*, *New Yorker*, *Cosmopolitan*, *Saturday Evening Post*, *Colliers*, *Good Housekeeping*, *Ladies Home Journal*, *Woman's Home Companion*, *American*, *National Geographic*, *Better Homes & Gardens*, *American Home*, *Popular Science Monthly*, *McCall's*, *Household Magazine*, *Woman's World*, and *Country Gentleman*.

Trade publications on the advertising schedule include *ELECTRIC REFRIGERATION NEWS*, *Electric Kitchen Times*, *Progressive Grocer*, *Meat Merchandising*, *Chain Store Age* (all editions), *American Restaurant*, *Restaurant Management*, *Hotel Management*, *Merchandise Manager*, *Home Ware*, *Retailing*, *House Furnishings Review*, *National Real Estate Journal*, *American Architect*, *Architectural Forum*, *Architectural Record*, *Hardware Age*, *Hardware Retailer*, *Electrical Merchandising*, *Electrical Dealer*, *Electrical West*, and *Electrical South*.

Program was dramatized throughout by playlets and skits which told the spring sales story. Professional actors and actresses from Cleveland's Play House and from the staffs of local radio stations, were employed. These skits were directed by Carle Robbins, editor of *Electric Kitchen Times*. Each act was introduced by F. C. Chandler, billed as "I. Will Profit" and W. E. Hart, as "Heze Loss," representing, respectively, sales enthusiasm and pessimism.

The convention was also shown a series of talking movies, made especially for the convention and for the spring regional meetings which will follow in principal cities throughout the country. A retail sales film, produced under the direction of Retail Manager Scaife; an advertising film, directed by Sales Promotion Manager Daily; a general sales film, conceived by Sales Manager Sweeney; and a range film by Range Division Manager Poterat were presented.

Kelvinator Dramatizes Sales Plans for Dealers

(Concluded from Page 1, Column 1)

will be used to outline Kelvinator's merchandising and advertising plans for 1934, and to emphasize to dealers the prime selling points in the new Kelvinator line of household and commercial models. The slide films and the telephone message scheme are calculated to reduce the "wear and tear" on executives, as only one factory man will be needed at each meeting, and he will do a minimum of talking.

Al Weeks, well-known in the Detroit area as a commentator on local newsreels, and Miss Kay Richmond, radio actress, do the job of pointing out the features of the new line. Vance Woodcox, director of advertising for Kelvinator Corp., outlines the advertising plans, and Fred Helburd, in charge of advertising and sales promotion on commercial products, does the voice recording on the commercial sales program. Mr. Weeks also puts the ReDisCo message over.

Advertising Schedule

Dealers will learn from Mr. Woodcox that national advertising will be placed in five magazines in the so-called "popular" field (*Saturday Evening Post*, *Collier's*, *McCall's*, *Ladies Home Journal*, *Good Housekeeping*) and that six, 4-color full page advertisements will appear in *Fortune* starting with the March issue.

Newspapers will get the most extensive use in local advertising, with radio and billboards strictly supplemental to the newspaper copy.

Mr. Woodcox also discusses the results of several interesting surveys, among them the famed Dr. Starch reports, with reference to the effectiveness of Kelvinator's 1933 advertising. He also explains that selection of national magazines for 1934 copy was based partly on a survey made in the form of postcard questionnaires sent to Kelvinator purchasers, checking the magazines which they read regularly.

That Kelvinator is intending to go after commercial business this year in an aggressive fashion is indicated by the fact that three films are devoted to telling the 1934 commercial story.

The three films are titled "The Profit Story," which presents the results of a survey showing the profitable market awaiting the enterprising commercial salesman; "20 Years of Progress," in which new developments in commercial equipment are outlined; and "The Kelvinator Commercial Salesman," in which Mr. Helburd points out how the various steps to the order can be taken with new sales helps prepared by Kelvinator's sales promotion department.

Refrigeration Division to Meet in Cincinnati

(Concluded from Page 1, Column 3)

turing industry.

This meeting will give the electrical industry an opportunity to "get its house in order" before the general NRA conference March 5 in Washington at which all code authorities and trade association code committees will meet for the purpose of considering improvements in codes of fair competition, code administration, and further ways and means of accomplishing the purposes of the National Industrial Recovery Act.

Oil Burner Show to Be Opened March 5

PHILADELPHIA—The eleventh national oil burner show to be held March 5 to 9 at the Commercial Museum here had a total space reservation of 94 booths as of Jan. 10, according to Harry F. Tapp, executive secretary of the American Oil Burner Association.

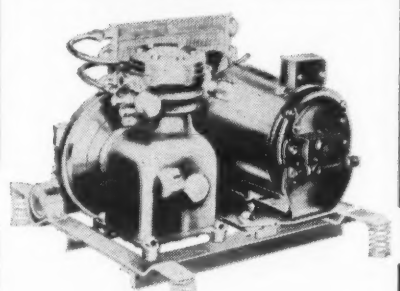
Among those reserving space are the following:

American Radiator Co., Automatic Burner Corp., Burnham Boiler Co., Century Electric Co., Century Engineering Corp., Chase Brass & Copper Co., Cleveland Steel Products Corp., Detroit Lubricator Co., Electrol, Inc., Enterprise Oil Burner Co., Fitzgibbons Boiler Co., Inc., General Electric Co., Jefferson Electric Co., Kelvinator Sales Corp., Kleen Heat, Inc., May Oil Burner Corp., Mercoid Corp., Minneapolis-Honeywell Regulator Co., Nu-Way Corp., Penn Electric Switch Co., Petroleum Heat & Power Co., Preferred Utilities Mfg. Corp., Silent Glow Oil Burner Corp., Timken Silent Automatic Co., Tutill Pump Co., Viking Pump Co., Wayne Oil Burner Corp., Westinghouse Electric & Mfg. Co., Wood Hydraulic Hoist & Body Co., York Oil Burner Co., Inc.

Cleary-Carpenter to Sell Automatic Washers

NEWTON, Ia.—Just appointed as distributor of Automatic washers and ironers in Columbus, O. is the McCleary-Carpenter Co.

Kellogg Units



Model 43—122 lbs. I.M.E.

For CH₂Cl and SO₂
Sold Complete or Compressors Only
For Domestic Household Lines
For Electric Water Coolers
Very Quiet and Efficient
Kellogg Units are standard equipment:
Oldest Refrigerator Co. in U. S.
Largest Electric Water Cooler Co. in U. S.
"There Is a Reason"

Prompt Delivery

Reasonably Priced

Kellogg Manufacturing Company

Refrigeration Sales Division
239 Broadway
New York City
Factory: Rochester, N. Y.

RELIABILITY FOR SALE

ANSUL SULPHUR DIOXIDE

To be perfectly satisfactory for refrigeration purposes, sulphur dioxide must be extremely dry and free from impurities. Ansul's exact manufacturing methods and laboratory analysis of every cylinder assures a product that meets these requirements.

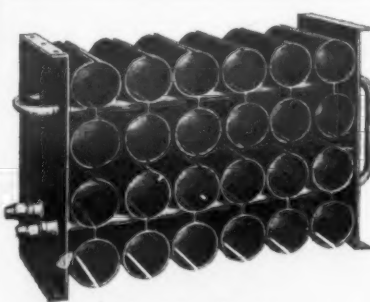
ANSUL METHYL CHLORIDE

The same high standard of quality is maintained in the manufacture of Ansul Methyl Chloride. Its low moisture and acid content are made certain by strict laboratory analysis. It is fast freezing, stable and non-corrosive.

ANSUL CHEMICAL CO.

MARINETTE

WISCONSIN



Another Kramer Product BOTTLED BEER-COOLING COILS

Cool bottles to proper temperature—Eliminate "sweat bottles"—keep labels intact. All copper construction—fits any standard size beer bottle.

TRENTON AUTO RADIATOR WORKS

241 West 68th St. TRENTON N. Y. C. 5145 Liberty Ave. N. J. Pittsburgh, Pa.

Send for Prices and Information

The New Line of . . .
COPELAND HOUSEHOLD REFRIGERATORS
will be announced Feb. 28th
COPELAND REFRIGERATION CORPORATION · MOUNT CLEMENS, MICH.

REFRIGERATION NEWS

Registered U. S. Patent Office

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matter Aug. 1, 1927TEN CENTS PER COPY
THREE DOLLARS PER YEAR

Westinghouse Dedicates Its Electric Home

House Has Monthly Power Consumption of 1,500 Kwh.

By Elston D. Herron

MANSFIELD, Ohio — A forty-hour week for Mrs. America—

Westinghouse Electric & Mfg. Co. took its first stride toward that objective here last week, when it opened for public inspection its Home of Tomorrow, a cheery little house which is now the most completely electrified residence in the world.

It is a house where: there is sunshine at night, the coffee makes itself, the bathrooms dry the towels, doors open at one's approach, there is light you can feel but can't see, no one lights the furnace, shadows don't exist, refrigeration heats the water, the telephone's ring is a mellow chime, and Mother in the laundry can talk to Dad upstairs without raising her voice or moving more than a yard.

That isn't all. There is a nook for every mood, lights that blend with the hostess' dinner gowns. The bathtubs haven't any rings, and there is melody in every room. The bathroom floors aren't cold or slippery, the refrigerator defrosts itself at dawn, and there are 320 lights waiting to be turned on.

It stands as an engineer's conception of what may be expected in household equipment several years hence, when the public has learned to what extent electrical and mechanical devices can make possible less house-keeping and more home-making.

Purpose of the Home of Tomorrow is twofold: It will serve as a laboratory of household research, where engineers will study equipment now in the developmental stage and make tests with apparatus already in production. And it will show people what science has already done to banish household drudgery.

Most of the electrical equipment in the house is specially made, but Westinghouse engineers estimate that if it

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Carrier & Thompson To Talk in Detroit

DETROIT—An open meeting on air conditioning is being sponsored by the Detroit section of the American Society of Refrigerating Engineers next Monday night in the Hotel Statler, with Willis Carrier and R. J. Thompson as speakers.

Mr. Carrier, a well-known air-conditioning engineer, will discuss "The Greater Aspects of Air Conditioning," while Mr. Thompson, refrigerating engineer for Kinetic Chemicals, Inc., Wilmington, Del., will talk on new refrigerants such as F-12 which his company manufactures.

F. M. Cockrell, publisher of ELECTRIC REFRIGERATION NEWS, will act as chairman of the meeting.

Dinner will start at 6:15 p. m. in the banquet hall of the Hotel Statler, followed by the technical talks at 8 p. m. Reservations for dinner can be made by writing or telephoning John T. Schaefer at ELECTRIC REFRIGERATION NEWS.

Fedders Jobber Gets Increased Territory

BUFFALO—The states of Arizona, Utah, Nevada, and Idaho have been added to the territory served by Franklin G. Schlager, Pacific Coast jobber of the Fedders Mfg. Co., according to W. D. Kiefe, sales manager of the company.

These four states are in addition

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Grunow Radio Programs Start March 6

CHICAGO—Grunow products will go on the air March 6 when the first of a series of radio broadcasts sponsored by General Household Utilities Corp. featuring the Minneapolis Symphony Orchestra will be broadcast over a Columbia Broadcasting System network of 44 stations. The program will be every Tuesday at 9:30 p. m.

McKey Named Receiver In Bankruptcy for Grigsby-Grunow

CHICAGO—Federal Judge John P. Barnes on Feb. 20 appointed Frank McKey as receiver in bankruptcy for Grigsby-Grunow Co., manufacturer of Majestic refrigerators and radios. The company had been in equity receivership for the past few months.

Grigsby-Grunow was placed in bankruptcy at the recommendation of the equity receivers, Le Roi J. Williams and Thomas L. Marshall.

The company's book value, as stated in the bankruptcy order, was \$14,000,000 and its liabilities \$6,000,000. Bond of \$150,000 was fixed for the bankruptcy receiver and Judge Barnes directed the sale of the company in the near future.

Officials of the company have expressed the belief that the step taken in placing the company in a bankruptcy court will expedite plans for reorganization of the refrigeration division.

Nema Code Changes Up for Discussion

NEW YORK CITY — Proposed changes in the code for the electrical manufacturing industry will be discussed at a meeting to be held Thursday, March 1, in the ballroom of the Commodore hotel here under the auspices of National Electrical Manufacturers Association, and to which all electrical manufacturers have been invited.

Major changes to be discussed are those in the labor and "open price" provisions of the code.

The wage clause has been changed in the proposals of the Board of Governors of Nema to effect minimum wages for southern states (North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, and Louisiana) of 32 cents per hour for male employees, 27 cents for female employees; other states, 40 cents for male employees and 32 cents for female employees.

Nema is also asking that the 40-hour week be not applicable during conditions of seasonal or peak demand, in

Manning Heads Arco Air Conditioning Division

NEW YORK CITY—Fowler Manning, at one time president of the L. C. Smith and Corona typewriter companies, has been appointed director of the newly-organized air-conditioning division of the American Radiator Corp., officials of the company announced last week.

Grunow Producing 500 Daily

CHICAGO—Every day 500 new Grunow refrigerators are coming off the production line, according to President William C. Grunow of General Household Utilities Corp., and methods are being devised to step up this daily production schedule with the company's present equipment. Both machines and cabinets are being manufactured in the concern's new Chicago plant.

H. L. Bonfig, vice president in charge of sales, declares that enough unfilled orders have piled up to keep the factory running at its present capacity for another month.

TVA Refrigerator Specifications Given

CINCINNATI—Standard specifications for the low-cost refrigerator, sale of which will be financed in the Tennessee Valley Authority area by the Electric Home & Farm Authority, were given out to members of the Refrigeration Division of National Electrical Manufacturers Association at a division meeting held here Friday.

The requirements as set forth by the EH&FA are printed at the conclusion of the article.

A short discussion was held on the code for the refrigeration industry, but all action on the code will be deferred until a post-hearing conference is called by the NRA divisional administrator, according to Louis Ruthenburg, consultant to the Refrigeration Division of Nema.

Those attending the meeting Friday included:

G. M. Johnston, Universal Cooler Corp., chairman of the division; E. G. Biechler and H. M. Williams, Frigidaire Corp.; P. B. Zimmerman and T.

(Concluded on Page 4, Column 1)

Committee Retains 5% 'Nuisance' Tax

WASHINGTON, D. C.—The 5% excise tax on household electric refrigerators was retained in the new Federal tax schedules, completed last week by the Ways and Means Committee of the House of Representatives.

A brief showing why electric refrigerators should be exempted from the tax was prepared and forwarded to the committee by the Refrigeration Division of National Electrical Manufacturers Association.

The industry's protest against the tax may be carried to the United States Senate finance committee hearings on the tax it has been indicated by Louis Ruthenburg, consultant to the Refrigeration Division of Nema.

Royalty Visits a Copeland Exhibit



King Leopold III of Belgium (in uniform) converses with Managing Director Reul of the Copeland Brussels distributorship.

Copeland in Production On '34 Household Line; Executive Staff Named

Winslow-Baker-Meyering Operates Copeland as 6th Subsidiary

By Phil B. Redeker

DETROIT—Officials of the Copeland Refrigeration Corp., formally announced last Saturday by Dallas E. Winslow, president, are as follows:

President and treasurer—Dallas E. Winslow.

Vice president and secretary—J. R. Meyering.

Assistant secretary and treasurer—F. B. McKaig.

General manager—H. O. Seltsam.

Household sales manager—W. S. Grant.

Commercial sales manager and head of the national user's department—W. G. von Meyer.

Chief engineer—E. C. Haight.

Plant superintendent—J. W. Jenkins.

Purchasing agent—A. G. Watkins.

Manager of service repairs—R. T. Gmelich.

The principal part of the story behind the reorganization of Copeland Refrigeration Corp. is the story of the Winslow-Baker-Meyering Corp. of Detroit of which the new Copeland com-

(Concluded on Page 9, Column 1)

Hardware Retailers Re-Elect Ben Gude

By George F. Taubeneck

ST. LOUIS—Ben Gude, manager of the South End Hardware and Furniture Co. of this city, was re-elected president of the Missouri Retail Hardware Association at its thirty-sixth annual convention held here last week in the Hotel Jefferson.

William Bahn of Cape Girardeau was elected vice president; Frank X. Becherer of St. Louis, secretary; and Herbert Brown, Trenton, Mo., treasurer.

Executive board members will include George C. Eberlin, Hermann; L. R. Holt, Fulton; G. O. Busch, Union; J. D. Reynolds, Carthage; Milton Pauley, St. Louis; and E. J. Creesen, St. Louis.

Approximately 500 dealers registered from Missouri, Illinois, Indiana, Oklahoma, Texas, Mississippi, Kansas, and Arkansas.

Mayor Dickman of St. Louis welcomed the guests at the opening session, as did the following prominent St. Louis hardware men:

Charles H. Carpenter of the Witte Hardware Co., S. B. Ward of Geller,

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C. M. Eakin Leaving N. Y. Frigidaire Branch

NEW YORK CITY—C. M. Eakin, who has been managing the metropolitan New York operation for Frigidaire for more than a decade, has just announced his resignation from that company. He is now negotiating for a distributor's franchise of his own.

Since 1921 Mr. Eakin has been identified with Frigidaire in New York City. He managed the distributorship when Winston Paul had the franchise, and in 1930, when Mr. Paul relinquished his franchise and the New York branch was organized, Mr. Eakin was retained as general manager.

Under his eyes the annual Frigidaire business in metropolitan New York grew from 800 to 50,000 units.

Pittsburgh Distributors Form New Organization

PITTSBURGH—Distributors of electric refrigerators in this city have formed a Refrigeration Group of the Electric League of Pittsburgh for the purpose of functioning under a proposed refrigeration distributors code which will be supplementary to the general Wholesalers Code.

The new organization has adopted a code of ethics which will tend to the maintenance of fair trade practices. The new group is also making plans for a special public display.

7 Models in New Line; Prices Will Start At \$110.50

MT. CLEMENS, Mich. — Copeland Refrigeration Corp. last week made first shipments on its 1934 line of household electric refrigerators, a line which includes seven models ranging in net capacity from 3.96 cu. ft. to 7.42 cu. ft. and with a list price range of from \$110.50 to \$260.00.

The condensing units in the new line have a single-cylinder, conventional-type compressor, the unit being very similar to the 1932 Copeland with which Copeland distributors enjoyed their best year. Chief change is in the refrigerant, methyl chloride being used instead of Isobutane.

Also announced by Copeland last week were six new commercial condensing units, making a total of 18 units in Copeland's line of commercial refrigerating machines. The six new models include a ½-hp. air-cooled unit, a ¾-hp. air-cooled unit, a 1-hp. air-cooled unit, a 1½-hp. water-cooled unit, and a 3-hp. water-cooled unit. All commercial units are now belt-driven.

Cabinets in the new Copeland household line are not radically styled, but the corners on the top are rounded as are the vertical edges on the doors and compressor compartment panel. The compressor is located in the bottom of the cabinet.

The model with 3.96 cu. ft. net stor-

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Seven Manufacturers Appoint Distributors

Stewart-Warner Adds Three

CHICAGO—Stewart-Warner Corp. last week announced the addition of three new companies to its refrigerator distributor organization. They are the Shaw Distributing Co., Charlotte, N. C.; the Pierce-Phelps Co., Philadelphia; and the Capital Electric Co. of Atlanta.

Norge Names New Distributors

DETROIT—Three new distributors have just been franchised by Norge Corp. here. They are the Taylor Electric Co. of Milwaukee, the Dixie Maytag Corp. of Nashville, Tenn., and the Ellis Chaney Co. of San Antonio, Tex. Meetings for these distributors' dealers and prospective dealers are being held this week.

Tri-State Takes on Leonard

CINCINNATI—Tri-State Distributing Corp. of this city has just taken on the Leonard line of electric refrigerators, according to Charles H. Davis, president. The company has 100 dealers in this section of Ohio and in adjoining counties of Indiana and Kentucky. Congressman John B. Hollister is treasurer of the organization, A. A. Wenstrup is vice president, and T. M. Williams is sales manager.

Kelvinator Has New Alabama Outlet

BIRMINGHAM, Ala.—New Kelvinator distributorship here is Robert P. McDavid & Co., Inc. located at 2104 First Ave. North, and headed by Robert P. McDavid. Northern Alabama is the territory to be covered by the organization.

Clay Coe and B. C. McCoy, formerly domestic and commercial sales managers of Clark & Jones, Inc., are associated with Mr. McDavid in the business. Clark & Jones is no longer the Birmingham Kelvinator distributor, but is operating as a Kelvinator retail outlet.

Philadelphia Distributors Sell Grunow

PHILADELPHIA — Philadelphia Distributors, Inc. here has been appointed distributor for Grunow refrigeration in this territory, according to Harry A. Ellis, president. The company already handled Grunow radios.

Albert E. Hughes is the organization's vice president in charge of sales and advertising. Frank Frames is sales representative for the New Jersey territory, and Harry S. Rheiner

(Concluded on Page 20, Column 5)

BY GEORGE F. TAUBENECK ---

Hardware Dealers

Want Kerosene Units

Half a thousand hardware dealers from Missouri and adjoining states—including Illinois, Indiana, Mississippi, Texas, Oklahoma, Kansas, and Arkansas gathered at the famous old Jefferson hotel in St. Louis last week, and opined that the 10-penny-nail business might not be so bad, after all.

They heard CHARLEY MICHEL, whose work with the St. Louis Electric Refrigeration Bureau has won him two national awards and no end of favorable publicity, tell them that if they would learn how to merchandise electrical appliances aggressively, they could forget that the rest of their business was slow.

They looked over the offerings of wholesalers in St. Louis, grinned, and loosened up Scotch purses to order liberally.

CWA and AAA money is showing up around those parts, these hardware men reported in lobby conversations. They think some of it may blow their way.

"Refrigerators? Sure—Got any low-priced models? None o' your fancy-trimmed jobs needed around these diggins. That \$99.50 box might be a perty good seller, though. Guess I'd better have a couple."

Considerable interest was manifested by these men in kerosene-operated refrigerators for rural districts.

There'll be a market for a good low-priced job of that sort, many of them averred.

They were curious about the few machines of this type now on the market, more curious yet about their makers—with whom few of these dealers had done business before.

"How much do they cost to run? How about service and repairs? Can you get 'em in big sizes? Will they stand up in real hot weather like we have down here? Are they easy to install?"

We answered as best we could. Fact is, we don't know much about these refrigerators, ourselves.

Frigidaire in St. Louis

W. O. WALDSMITH, recently deceased St. Louis Frigidaire distributor, was the first and the oldest distributor of Frigidaire products in the world.

Before the days of Frigidaire he had been a Delco-Light distributor. For years he was one of President E. G. BIECHLER's closest friends. And up until a very few years ago, he annexed all the refrigeration business in the St. Louis territory.

His untimely death shocked the Frigidaire St. Louis organization deeply, but did not demoralize it.

Mr. Waldsmith's junior executives are carrying on, just as he would have had them do had he been living.

His son, Maxwell, is salesmanager of the air-conditioning department,

which promises to be a really important factor in the refrigeration business this year.

H. B. FITZWILLIAM, recognized in many quarters as one of the liveliest and hardest-driving household refrigerator salesmen in the industry, is continuing in that capacity.

A. J. WARNER is commercial salesmanager, and Vice President FRED VESPER is acting head of the distributorship.

Plans for future control of the distributorship are not yet definite.

Mr. Waldsmith had no retail selling organization. All his business was wholesale.

One reason—and the chief reason—for this policy was that long ago he lined up an unusually meritorious collection of strong dealers. He had five metropolitan dealers, 26 smaller dealers in St. Louis, and 140 dealers scattered through his territory in eastern Missouri and southern Illinois.

WILLIAM WILLOUGHBY, one of his metropolitan St. Louis dealers, has been rated as the biggest dealer in the entire Frigidaire organization, if not in the whole industry. He has 45 salesmen operating out of one retail store.

Doty, McElhinny et al

We journeyed down to St. Louis last week to watch a couple of men work.

One was W. D. McELHINNY, who used to be vice president in charge of sales for Copeland Products, Inc., and who, as commercial manager for Frigidaire, is now captain of one of the four barnstorming troupes from the factory.

The other was EARL DOTY, Frigidaire's veteran advertising manager. Mr. Doty, a tall, suave, polished gentleman who has the genuine variety of sophistication and erudition most advertising men try to affect, is no stranger to us. We've watched him work in conferences, talked with him quietly across a desk, and listened to his ideas and criticisms over good lunches and dinners.

But never before had we watched him perform as a barnstorming actor and pepper-upper. Gentlemen, it was a treat.

"Mac" McElhinny used to stage for Copeland the roughest conventions in the industry. He didn't always have a pot of gold to spend, but he was so good a showman that he generally drew the biggest crowds which attended any factory convention, and he invariably gave 'em more than their money's worth.

He still knows how to put on a show. And he still knows how to inspire a body of men.

Nor is the shift of loyalty from Copeland to Frigidaire at all difficult. He's simply going home again, for Mac was one of the first Frigidaire salesmen in the country, and worked up to be a factory executive before Copeland lured him away.

"Welcome Home, Jim!"

Another homecomer for whom Frigidaire has spread a big "W-E-L-C-O-M-E" mat is JIM NANCE, who used to be sales promotion manager for Frigidaire.

Last year a business machine company offered Jim a better salary and a bigger title—vice president in charge of sales.

But this year when Mr. Biechler decided to let go both barrels on air conditioning, he decided he wanted Jim back to head up the recreated air-conditioning department. So he made it worth his while, and back Jim came, happy as a kid.

He'd been lonely over at the other place.

Medium-Tall Tales Dept.

JIM IRWIN, a bright young man who dashes around the country attending to various important but miscellaneous matters for Frigidaire, told us the following not-so-tall-yet-usable yarns:

The McCamey, Tex., man this story is about is so embarrassed he won't allow use of his name. For years when he purchased a new automobile, the salesman would caution him to "break it in right, don't drive at high speeds at first."

So when he purchased a Frigidaire Super 63 he refused to allow his wife to use the cold control for two months.

Until a salesman visited him personally and convinced him of his error, he thought what was good for an automobile might be good for a Frigidaire, too.

"Calling all police cars. Drop into the nearest Frigidaire dealer's store. Pick up three Seth Parker pictures and rush them to your precinct headquarters."

This order, over the New York police radio the other afternoon, sent police cars scurrying to Frigidaire showrooms all over New York rounding up pictures of the schooner on which Phillips Lord is sailing on a round-the-world cruise.

New York police captains know how to get things quickly. Today, pictures of the Seth Parker, properly framed, adorn precinct and police headquarters. And his Frigidaire radio program is tuned in regularly.

Poet's Corner

For a recent air conditioning school in Dayton, Frigidaire's TED HARTON wrote two song parodies which we think you'll like:

The AC Engineer!

(Georgia Tech)

He's a helluva, helluva, helluva, helluva cooling engineer
A rambling wreck from Frigidaire
And nothing does he fear.
He specifies "B & I," he knows the "H & O"
And if you want a cooling coil—he'll tell you where to go!

He's a helluva, helluva, helluva, helluva AC engineer
He takes ten pounds of SO₂
To cool his glass of beer
In winter he turns on the cold; in summer takes the heat
But as an AC engineer—he certainly can't be beat!

"Wanna Buy a Duct?"

(Yankee Doodle)

Joe Penner was an engineer
From far-off Oskaloosa
He came to Dayton to the school
The same as me and you-sah.

CHORUS

Penner was an engineer
Penner knew his cooling
He razed the speakers at the school
With all his funny fooling.

"I didn't know that," Joey cried
"Izzat so? Well, I never!"
He made the scholars laugh and play
Because he was clever.

CHORUS

At the close of school today
Joe said, "We're in luck, sir!"
"Our slogan for the year should be
"Do you wanna buy a duct, sir?"

Each Month a Record-Beater

Back in 1932 L. D. James & Co., St. Louis area distributor for General Electric was having its troubles. Competition from major electric refrigerators, competition from Electrolux, competition from the "jillopies," and hard times all were combined to make life just a bit sad for "JESSE" JAMES and BILL BURTON.

What could they do? One thing they decided upon was that they needed the proper atmosphere, setting, and surroundings. Which meant splurging themselves on a new home.

At that time they had offices in an old building down by the waterfront somewhere. The writer once spent an hour and a half wandering around a four-block-square section trying to locate them. There wasn't even a G-E monogram in sight.

Well, the new James & Co. building out at 4144 Lindell went up in good time, despite the long rainy seasons. It was a honey. Plenty of land and air around it, set well back from the street, capacious and luxurious inside, it was Just What the Doctor Ordered for James & Co.

They began moving into it in June; changed their set-up somewhat, and squared away for action.

Beginning with August and continuing right on down to the present, every month since the change was effected has been a new all-time record for that month-of-the-year since the company was founded! !!!

Mr. James says they're going to try desperately to maintain that record for the rest of the year. But if his April, May, and June each set all-time records for those particular months, they'll probably have to erect another new building alongside their present one!

Already they're overcrowded. Mr. James proudly conducted us through his new establishment, showing us, among other things, a bridge party in session, an appliance classroom (prospects every Thursday, users every Friday, salesmen every morn-

ing), the closed door of a salesman's training classroom (sessions every day) salesman's consultation room, some cozy private offices, a Monitor top refrigerator used for 5½ years without a single service call and then turned in on a late model, and any number of other interesting things and people.

At present James & Co. is doing just about the best job of any G-E distributorship in the country on appliances other than refrigerators, G-E officials declare.

Here's how:

(1) All salesmen are given unusual thorough training in both the technical and merchandising aspects of each appliance.

(2) In order to obtain his monthly bonus and annual bonus, each salesman must not only sell his quota of refrigerators, but a quota of laundry equipment, vacuum cleaners, and other appliances.

(3) Results: (a) James & Co. volume on other appliances reaches new high; (b) income of James & Co. salesmen greatest in history of firm.

Stix, Baer & Fuller Turn on the Heat

James & Co. maintains a most elaborate G-E "store within a store" at Stix, Baer & Fuller, leading St. Louis department store. It is a complete showroom—with display windows, doors, and roof, set down inside the store. All G-E appliances are sold there.

Mr. James says it's too good, too magnificent. People eye it, sniff warily around it (like the proverbially sly fox and a baited trap) but aren't inclined to go inside. He thinks maybe the windows and doors and splendid separateness of it all may have been a mistake.

It's an uplifting sensation, though, to walk through the aisles of Stix, Baer & Fuller and watch people buying. And it's even more brightening to talk to the joyous department heads, who are watching once again the thrilling spectacle of rushes of women fighting over bargains, and noting with unconcealed satisfaction the steady drains upon their supplies of good goods.

Remember the depression story of the two Jewish gentlemen—strangers to each other—who sat down together on a train?

"Oi, oi, oi," groaned one.

"You're telling me?" responded the other.

Here's how two Stix, Baer & Fuller department heads might say it today:

"Oi, oi, oi," groans first D. H.

"Listen, schtunke," responds second D. H., "for vy are you tired and groaning. Vy, today in our department ve haf take care of sixty t'ousan" etc.

Recently the heads of this famous department store gave a nine-course banquet for all officers, junior executives, and buyers. Said the heads to their "hands and feet":

"Turn on the heat! Give 'em both barrels! Shoot the works! Buy sufficient quantities. Stock up. Get good goods. Prosperity is returning. Prepare for it." Or words to that effect.

Business in almost every department is running from 50% to 100% ahead of last year.



General Electric distributors meet at Nela Park for annual spring meeting. (1) "Squire" Head of Indianapolis tries the water faucet in the dishwasher. (2) Ed Schaefer passes out a grin before entering the Administration building. (3) Distributor Head is genuinely glad to see "Kelly" Courtright, who came all the way from California. Mr. Courtright and Mr. Schaefer, one would guess from the above picture, are buddies. But look at this fourth picture! A minute later and the air was full of stinging pellets.



(1) Walter Daily, G-E appliance sales promotion manager, looks over a new film on which he has been working. (2) Fred Harvey, divisional representative, peeks around the corner to see if Daily is busy. (3) Warde Stringham, biggest and best-humored mastodon in the G-E organization, waits his turn in Walter's outer office. (4) So does Stringham's boss, Distributor Dan Alexander of Atlanta. (5) This isn't a G-E man, but we needed one more picture. Frank Pierce, Frigidaire household sales manager, leans over the footlights to talk to his men.

for 66 big days

**MAR. 15th
to
MAY 19th**

General Electric launches a record-breaking sales drive!

National Advertising

Spring Sales Contest

Kitchen Coach

Special Sales Helps

Special Window and Store Displays

Special Publicity for Newspaper Release

Special Newspaper Advertising Campaign

Cooking Schools

Direct Mail Announcements

Special Sales Training

Billboard Advertising

Special Radio Broadcasts

Home Service Demonstrations

FLASH! General Electric refrigerator retailers the country over are welcoming the news of the greatest Spring sales program in G-E refrigeration history! 100% coordination of all sales activities, 100% cooperation from every link in the G-E distributing organization—plus the powerful influence of a *timed* national and local advertising campaign—will drive in a record-breaking business to every General Electric dealer who participates.

For 66 *Big Days*—from March 15th to May 19th—with new models, new sales strategy, new enthusiasm, *timed* to meet the demand of a buying public who again have money to spend—General Electric dealers will write a prize chapter in their book of refrigerator profits!

General Electric invites dealers in open territories to participate in this unprecedented 66-Day Sales Drive. It will be only the beginning of a profitable, year 'round business that you can build as big as you want. Write or wire for details of the G-E franchise. General Electric Co., Electric Refrigeration Department, Section DF23, Nela Park, Cleveland, O.

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

Manufacturers Get Specifications for TVA Refrigerators

(Concluded from Page 1, Column 3)

K. Quinn, General Electric Co.; H. W. Burritt, Kelvinator Corp.; Howard E. Blood, Norge Corp.; M. A. Martin, Uniflow Mfg. Co.; A. M. Taylor, Potter Refrigerator Corp.; Tom J. Smith, Jr., Apex Electrical Mfg. Co.; R. E. Imhoff and P. Y. Danley, Westinghouse Electric & Mfg. Co.; H. A. D'Arcy, Stewart-Warner Corp.; Lewis M. Crosley, Crosley Radio Corp.; F. E. Sellman, Servel, Inc.; W. A. Carson, Sunbeam Electric Co.; Thomas Evans, Merchant & Evans Co.; Louis Ruthenburg, consultant to the Refrigeration Division.

Specifications

1. Definition

This specification applies to electrically operated refrigerators intended for domestic use. An electric refrigerator is defined as an insulated cabinet, a refrigerating unit, condenser, a cooling unit, and controls therefor, with limitations as defined below.

2. Approval

Refrigerators shall be listed by the Underwriters' Laboratories.

NOTE: In writing these specifications no attempt has been made to include features which are covered by the Underwriters' Laboratories Standards for domestic electric refrigerators. Also, no requirements are incorporated which are in conflict with the Underwriters' Laboratories Standards for domestic electric refrigerators.

3. General

It is the intent of this specification to define refrigerators which are substantially constructed of heavy gauge materials so that they will be enabled to stand extremely heavy service with a minimum amount of maintenance. These requirements apply equally to mechanical and electrical construction, as well as the design of the refrigerators, controls, refrigerating units, motors, and related parts.

No duty shall rest on the Electric Home and Farm Authority to approve any refrigerator, whether or not it comes up to these specifications and Authority, in determining whether or not to approve any product, shall give due consideration to the field experience which has been had with the various features of the product.

4. Supply Circuit

Electric refrigerators shall be designed to operate on 115-volt, 2-wire

single-phase 60-cycle service.

5. Cabinet Size

The cabinet shall afford not less than 4 cu. ft. of net food storage volume and not less than 8 sq. ft. of shelf area, as computed by the Nema approved standard method; provided, however, if a cabinet of non-conventional design is submitted which will provide food storage capacity from the standpoint of actual use equal to that of the conventional 4-ft. cabinet with shelf area of 8 sq. ft., then in that event such cabinet may be of less than 4 cu. ft. of net food storage volume, but in any event not less than 2.5 cu. ft.

6. Exterior Finish

The exterior finish of the cabinet shall be at least two coats porcelain (one ground coat and one cover coat) or adequate lacquer or Dulux or equivalent finish on steel.

NOTE: The porcelain will be financed anywhere in the territory of EHFA's operations. The lacquer, Dulux, or equivalent will not be financed except in territories herein-after approved by EHFA, which territories will not include the coastal region of any region below the frost-line.

7. Hardware

The hardware shall be of substantial design and of sufficient strength. It

may be made of brass stampings, castings or forgings or of die cast zinc base metal suitably finished by plating with heavy duty nickel and chromium, or other suitable materials. The hinges and latches shall be so attached to the frame and door as to reduce to a minimum the tendency to warp or sag.

8. Frame Construction

The frame construction shall be rigid enough to withstand without damage shipping, handling, and all ordinary usage and may be made of all steel or wood reinforced by steel.

9. Insulation

The insulation must be the equivalent of 1½ in. of material having a thermal conductivity (K factor) not greater than 0.28 B.t.u. per hour per sq. ft. per in. thickness per degree (F) temperature difference. The insulation must be water-proofed or sealed to prevent moisture penetration to the insulation space and the insulation must be installed in a permanent manner to preclude the possibility of distortion, sagging, or the occurrence of air pockets in which moisture might accumulate or which might affect the insulating qualities of the insulation utilized.

10. Interior Finish

The interior or food storage space shall be two coats porcelain (one

ground and one cover coat) on steel.

The food shelves shall be welded steel construction, coated with a non-corrosive material and shall be rigid enough to support the food load.

The shelf supports shall have sufficient strength.

The ice cube freezing trays shall be made of anodized aluminum or heavily tinned copper or brass.

11. Performance

When tested in accordance with the procedure in the Nema proposed test code for electrically operated refrigerators, draft dated Feb. 2, 1934, the complete refrigerating unit shall, in a 100° F. room, maintain an average cabinet air temperature under 50° F. and shall freeze not less than 3 lbs. of ice as cubes in not less than two trays in five hours, and in a no-load test, the kwh. consumed per 24 hours will not be more than 2.2.

12. Radio Interference

There shall be no objectionable radio interference on an alternation current radio set connected to same circuit as the refrigerator.

13. Motor

The apparent efficiency, power factor and starting current on the motor shall meet the requirements as contained in the standards of the motor and generator section of Nema.

14. Temperature Control

The refrigerating units must be equipped with an automatic temperature control with manual adjustment.

15. Condensing Unit

The condensing unit shall be of such design and construction which shall provide ample bearing area, proper clearance, safe speeds, oiling, sealing, etc., so as to insure a mechanically sound unit which will give successful operation and long life with a minimum amount of servicing. It shall be manufactured of standard materials of the best quality obtainable for its intended use.

16. Noise

The operation of the refrigerating unit shall be free from objectionable noises and vibration.

17. Crating

Each refrigerator shall be substantially crated to conform with the specifications of the Railroad Freight Inspection Bureau.

18. Instructions

Suitable instructions shall be furnished with each refrigerator which fully explain the operation and care of the refrigerator.

19. Guarantee

Each manufacturer furnishing refrigerators under this specification shall furnish a written guarantee to the effect that any part, except porcelain enamel, proving defective in workmanship or material during one year from the date of installation will be replaced free of charge. No allowance for labor will be made.

20. Electric Home and Farm Authority Identification

Each refrigerator will be furnished with an emblem as specified by the Electric Home and Farm Authority.

Nema Code Changes To Be Discussed

(Concluded from Page 1, Column 2)

which cases such numbers of hours may be worked as are required by the necessity of the situation but not to exceed 44 hours per week for any 12 weeks in any 12 consecutive months.

Nema is also asking NRA not to apply the 40-hour week to highly skilled workers in very special cases where restriction of work hours would reduce or delay production.

It is also proposed that divisions of the electrical industry which have highly seasonal hours are to provide for such additional work hours as are required in their supplemental codes.

Certain phases of the "open price" provision are defined at more length in the proposed amendments, and an "escape" clause is provided whereby if a supervisory agency determines it undesirable for manufacturers in its division to file price lists and discounts, the agency will discontinue the practice.

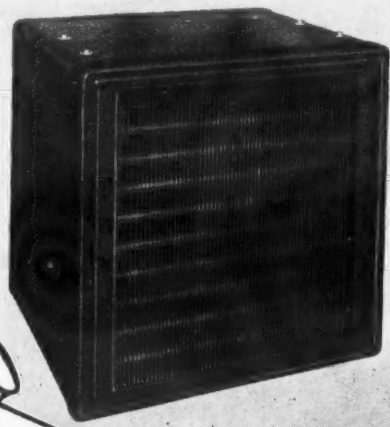
'Porcelain Parade' to Be Revived at Fair

CHICAGO—Plans for the revival of the "Porcelain Enamel Parade" at the 1934 Century of Progress Exposition in Chicago this summer are being made by the Porcelain Enamel Institute, sponsor of the exhibit.

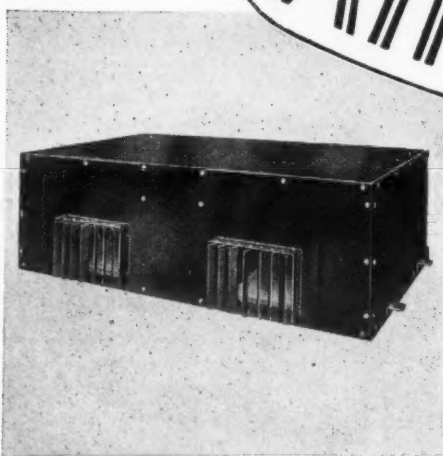
Last year the Parade consisted of 44 individual displays, augmented by an educational exhibit in the form of a porcelain enameling plant, where ash trays were manufactured. According to the Institute, more than 6,000,000 people saw last year's exhibit, nearly six thousand inquiries were reviewed and approximately 60,000 ash trays were sold.

The Norge Corp. has already renewed its application for space and the following exhibitors of porcelain-finished refrigerators last year have indicated their intention of participating: Crosley Radio Corp., Frigidaire Corp., General Electric Co., and Grigsby-Grunow Co.

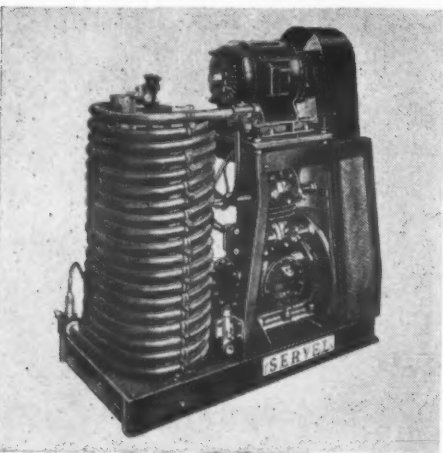
Suspended-Type Cooling Unit—for Summer use. Compact, efficient, powerful. To be suspended from the ceiling or for wall ducts.



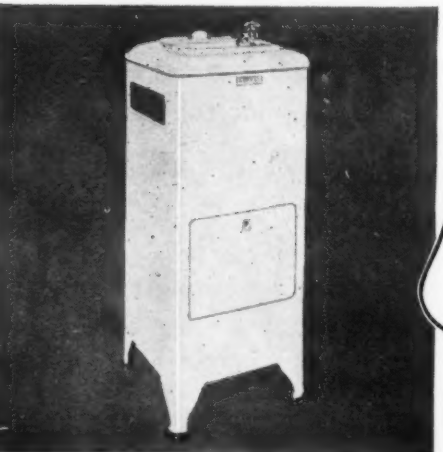
Self-Contained Cooling Unit—for Summer use. This "package job" can be installed anywhere with ease, and removed during Winter.



Suspended-Type Comfort Unit—for all-season, heavy-duty Air Conditioning. To be suspended from the ceiling or connected to wall ducts.



Refrigerating Machine Unit—one of the big multiple-ton models developed for Air Conditioning. Other units for every fractional-ton need.



Water Cooler—one of the efficient, self-contained models. Available in a wide variety of finishes, capacities and outlet fixtures.

SWIFTLY, surely—Servel is taking the lead in Air Conditioning.

Why? Because Servel has actually matched the potentialities of this fastest-growing new giant industry with advanced equipment for every need. Because Servel's aggressive sales program assures volume and profits for those men who get into Air Conditioning now.

Look at the line! Floor and ceiling comfort units for year-round use! Self-contained room coolers! Massive new 7-ton and 10-ton compressor units!

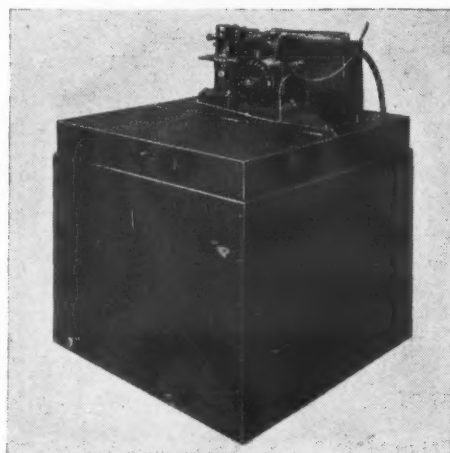
Plus—the world's foremost Commercial Refrigeration equipment, with a market already established in your local territory. Refrigerating machines for every capacity! Humidraft chilling units for triple-controlled refrigeration! Self-contained milk coolers! Water coolers! Beer bars!

Here's the line that's destined to make Air Conditioning history. Distributor and dealer franchises are still available in some cities. Wire or write today for details. Servel Sales, Inc., Evansville, Indiana.

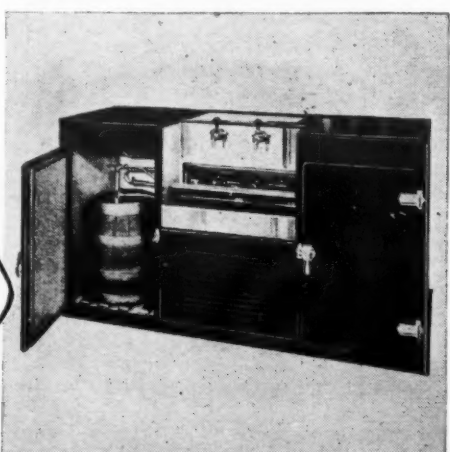
* True Air Conditioning does many things . . . cools and dehumidifies in Summer . . . heats and humidifies in Winter . . . circulates, filters, ventilates the year 'round. Servel Air Conditioning is true, complete Air Conditioning.



Floor-Type Comfort Unit—for the year-round control of the temperature, humidity, cleanliness, volume and distribution of air.



Self-Contained Milk Cooler—complete with refrigerating machine unit and cabinet. A low-priced feature for dairy territories.



Self-Contained Draft Beer Bar—complete with refrigerating machine unit. Also compact bar inserts for modernizing old-fashioned fixtures.

Enthusiastic Owners

SELL THIS REFRIGERATOR FOR YOU!

6% to 40% greater owner LOYALTY! 8% to 20% greater owner SATISFACTION! That's the lead enjoyed by the Westinghouse Refrigerator over all others, according to a nation-wide survey of 15,000 homes, recently conducted by an independent research organization! Just imagine what this can mean to YOU as a retailer! Investigate at once!

Get the Facts!

Send for the FRANCHISE COMPARISON CHART!



CHECK
and compare
facts like these:

- The Westinghouse unit requires no oiling or attention.
- By actual test, the Westinghouse uses less current than one ordinary lamp bulb.
- Westinghouse Refrigerators are sold all over the world, in more than 40 countries.

● Satisfied customers mean satisfied dealers... more sales, more profit, less service expense. Now, through findings published after independent investigation, the Houser Associates of New York, report Westinghouse owners the best-satisfied and most loyal group of refrigerator owners in the world! No wonder we say to refrigerator prospects — "You'll be happier with a Westinghouse." No wonder we say to dealers — "The Westinghouse Franchise is the most valuable in the industry."

Get the facts, at once, about this wonderful line that enthusiastic owners sell for you! Why not get the answers to every question in your mind about your 1934 refrigeration selling plans? The Franchise Comparison Chart gives complete details — enables you to compare the facts in the privacy of your own office... free from "selling pressure." A copy will be sent you without cost or obligation. Simply drop us a line or mail the coupon below... TODAY!

EVERY HOUSE NEEDS WESTINGHOUSE

Westinghouse Refrigerators

**MAIL
COUPON
for Your
free copy**

Westinghouse Electric & Mfg. Co.,
Refrigeration Div. (ERN 2-28), Mansfield, O..
Please send us a copy of the Franchise Comparison Chart, free of cost or obligation on our part.

Name
Address
City State

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VOL. 11, No. 9, SERIAL NO. 258, FEBRUARY 28, 1934

Tomorrow's Home Today

GUESTS of the Westinghouse Electric & Mfg. Co. at the "preview" of its Home of Tomorrow in Mansfield last week were inclined to agree that this remarkably planned house was misnamed. It should be called, reasoned the trade publication and metropolitan newspaper men present, the Home of *Today*.

Reason for their insistence on this point was that nothing in the house seems weird or fantastic or untried. Rather, every appliance and electrical convenience has a *natural* place there, serves a very definite purpose. Only new features of most of them are their unusual appearance and built-in construction. Things electrical have merely been arranged and coordinated to lessen and systematize work not only in the kitchen, but in every part of the house. One doesn't have to be coached on how to live in it—almost anyone could use it *today*.

Heavy Power Consumption

The Home of Tomorrow differs from the average American home chiefly in the large number of tasks that can be performed electrically, and the amount of electrical power it consumes. Whereas the average home today has a connected load of three kilowatts, the Home of Tomorrow has 87. Monthly power consumption of the average home is 50 kilowatt hours, of the Home of Tomorrow is 1,500. Electrical horsepower available for household duties in the average home is eight, equivalent to 64 servants. But in the Home of Tomorrow, the electrical horsepower totals 108, amounting to the work of 864 servants. With all its built-in appliances in mass production, the house could be built today for about \$12,000, Westinghouse engineers estimate.

As visitors went through the house, most of them contended that despite the high monthly bill for electricity (approximately \$38 in Mansfield today), and the assertion of Westinghouse men that "the house may not be practicable for several years yet," a good many people would be glad to buy such a residence in 1934 if there were one for sale. Because, they argued, to see the house is to want it, and to want it badly enough is to be willing to pay the upkeep.

Revision of Rates Indicated

Problem there, however, is that at present the house must be *seen* to be appreciated and "sold." Until enough demonstration models can be built to reach a good percentage of the potential market and create a demand for completely electrified homes, mere mention of the monthly power bill might halt any interest shown by prospective buyers who had only verbal descriptions of the residence to guide them. Thus, the Mansfield house should probably be

called "the Home of Today waiting for the power rates of tomorrow," as Vice President Allen put it.

Westinghouse engineers have completed the first Home of Tomorrow, and are already experimenting with it and seeking ways of increasing the efficiency of its equipment. It now remains for the company's sales and advertising executives to find the best way of selling it. And that job, they think, can best be accomplished through a process of education—of teaching American housewives what electricity can do to cut in half their housekeeping hours. The trend toward lower power rates will lessen resistance to this idea during the next few years, the Westinghouse people think.

Cooperation from Many Sources Needed

Last week V. G. Vaughn, Westinghouse appliance engineering manager who conceived the idea of the Mansfield home and supervised its construction, said: "If 3-1/3% of the wired homes in the United States were equipped like the Home of Tomorrow, it would mean doubling the production of the country's appliance manufacturers, and would double the nation's power consumption."

If this is true, it seems plausible that after studying the possibilities of the all-electric home, appliance manufacturers and public utilities might join Westinghouse in a country-wide drive to sell the idea of complete house electrification in as short a time as possible, thus making a wide distribution of homes like the one at Mansfield a reality long before the endeavors of an individual company could accomplish such a step.

WHAT OTHERS SAY

Needed—a Common Program—and Goal

DISPASSIONATE survey of national and local actions with respect to the electrical industry affords amusement as well as concern and proves once again that human beings are irrational. The administration records its conviction that a more abundant and a more universal use of electricity would contribute the greatest of boons to social and economic well being. Then it proceeds to prevent the consummation of this objective by starting subsidized, competing utilities in many localities and by smashing the credit of the established utilities through the use of taxation, investigation and invective. It fails to realize that the present industry is in position to carry out its plans only if it is prosperous. It fails to support the existing industry with financial aid so that it might more quickly and economically market its products and service and expand its facilities.

Local actions in many states are just as inconsistent. There is now a wave of forced rate reductions, appraisals, increased taxation and studies of cost of service to the several classes of customers. These are handicaps and not aids to more abundant and lower-priced service in each state. Any intelligently conducted utility builds for the future and expands its facilities into very thin, and even loss, territory. This has been the practice of good utility managers and is in the public interest for it produces a regional development. Under these conditions, of course, the large cities or the dense load areas bear more than their share of the expense if rates are based upon inventory cost. Also, certain classes of service, such as main-street merchants, pay relatively more than do farmers, residents, and industries where utility service is highly competitive. Even in residential service the medium- and large-use customers carry the losses incurred in serving the small-use customers. Utility income and rates are adjusted to fit all these conditions and loss business capable of being built into profitable business is carried in the amount that is made possible by the entire business in a region.

For example, the farmers are now demanding electric service. This has been built up slowly by utilities because it is a loss business; nevertheless, a steady and consistent effort has been made to take on as much as possible of rural load and to build up the consumption of rural customers. If this business is approached on a cost-of-service basis it cannot be obtained, yet several states that advocate service to all farms are most insistent upon appraisals and rates based upon cost of service as fundamental to utility rate policies. In addition, these states make appraisals and then increase the assessment value to get more taxes when already from 15 to 22 cents of each dollar of utility income is paid out in taxes.

Inexpensive and abundant electric service in this country will only come when utility managers who know the business are permitted to build and expand and to sell the far-from-saturated markets. They are competent, they have the public interest in mind and they will voluntarily make rate reductions because they know these are good business if justified. But they must have capital and they must be able to use their income for legitimate purposes and not pay out most of it for taxes, for appraisals, and for legal fees necessitated by ever-changing and opinionated orders from legislatures and commissions.—*Electrical World*, Feb. 17, 1934.

LETTERS

Quite Newsy

Electric Refrigeration Bureau
Edison Electric Institute
420 Lexington Ave., New York City
Feb. 19, 1934.

Editor:

Congratulations on the Feb. 14 issue of the News. With the complete sales figures on electric refrigerators for last year and an excellent editorial on air conditioning, I think that it is quite a news sheet.

Some day I hope to have the pleasure of seeing your new, completely air-conditioned office and I hope that it is a hot, humid day when I do it, just to see how easily these editors work when others are having a hard time just living.

G. N. BROWN,
Refrigeration manager.

Good Photographs

Heating and Ventilating
140 Lafayette St., New York City
Feb. 13, 1934.

Editor:

We have noted with considerable interest your use of Contax or Leica camera photographs in ELECTRIC REFRIGERATION NEWS. For some time we have been burdened with a heavy Graflex, and we are wondering just what can be done with the newer cameras from the standpoint of business papers.

Inasmuch as your paper is doing such an outstanding job in reporting events by the use of photographs, we are taking the liberty of asking your help along these lines.

CLIFFORD STROCK,
Associate editor.

Asset to Paper

Sound Pictures, Inc.
3091 Mayfield Road, Cleveland
Feb. 21, 1934.

Editor:

We are certainly surprised at camera results you have obtained, and also wish to retract any disparaging remarks I might have made regarding your ability to photograph the subjects under the artificial light you had at the time. You are certainly gaining quite a reputation with that little camera of yours, and I do believe it is certainly an asset in increasing the popularity of ELECTRIC REFRIGERATION NEWS.

X. F. SUTTON,
President.

Compliments

Stern & Company, Inc.
Hartford, Connecticut
Feb. 14, 1934.

Editor:

Permit me to compliment you on your editorial on page 10 of the Jan. 31 issue.

FRANCES E. STERN,
President.

Display Case Men in East Have Troubles Too

Greenwood Commercial
Refrigeration Co.
59 S. Fifteenth St., Pittsburgh
Feb. 23, 1934.

Mr. George Lindahl, V.P.,
Commercial Ref. Mfg. Co., Ltd.,
Los Angeles, Calif.

Dear Sir:

In the last paragraph of your article appearing in the ELECTRIC REFRIGERATION NEWS of Feb. 21, 1934, you invite the opinion of other manufacturers. We regret that although interested in commercial refrigeration, we are not a refrigerator manufacturer, but certainly would like to extend to you our congratulations for Truthfulness, as we feel that you have covered the subject of commercial refrigeration thoroughly in your entire article.

You mention that west of the Rocky Mountains, you are blessed with between 60 and 70 small one-man cabinet factories. In the Commercial Refrigeration line, just west of the Appalachian Range, we are blessed with approximately six to seven hundred free lancers or what we term "Boot-leggers," in the refrigeration trade.

Of course these men were driven out of the larger companies, owing to lack of employment, and after all no matter what our position in life, we will agree that the world owes them a living, even though they hurt the larger companies in securing this living.

Why not lay-off the little fellow; we know of a large company in your line, who has taken on a commercial refrigeration unit, so they can chisel in and give the customer a unit gratis in order to secure his order.

You will appreciate this can be done very easily today, as commercial refrigeration is a very small item as compared with commercial refrigerators.

We also know of the sale of commercial refrigeration by one of the "Large Shots," who are constantly

named in ELECTRIC REFRIGERATION NEWS, whose salesman accepted \$70 to \$80 of meats, groceries, vegetables, and etc., as the down payment rather than lose the order to competitors, who stipulated cash.

A good cleaning out is badly needed, but when it is started, do not forget the "Big Shot" has some dirty corners. In conclusion let us suggest that you be voted a crown for Truthfulness, as one is certainly impressed in reading your article.

F. X. HOLLAND.

Discount Sales

Raabe & Mauger Hardware Co.
Albuquerque, N. M.

Editor:

We are wondering if the distributors of electric refrigeration have, or contemplate having an organization through which discounts to large purchasers can be controlled.

We have in mind particularly employees of the United States Government, making purchases through their respective departments for their personal use, and while we do not believe that this is sanctioned by the government, we do know it is occurring frequently and in certain points of the country a large percentage of the population are government employees, eliminating any opportunity for profitable sales of this merchandise.

Wishing you continued success for your magazine in 1934.

HARRY C. ASHCRAFT.

Necessity

"We feel that ELECTRIC REFRIGERATION NEWS is of necessity to us, as we like to keep posted with what goes on in the refrigeration industry."—M. J. Murphy, manager, Sidles-Duda-Myers Co., Des Moines, Iowa.

Grunow Executives Meet With Dealers

CHICAGO—Seven teams of executives are carrying the story of Grunow's 1934 line and sales plans to distributors in every part of the country, according to an announcement made at the headquarters of General Household Utilities Corp. here.

H. C. Bonfig, sales manager, J. J. Davin, director of sales promotion, and Dr. J. D. Jordan, physicist, comprise the group which is directing the meetings in the larger cities, including: New York City, Boston, Syracuse, Albany, Philadelphia, Washington, Baltimore, Buffalo, Pittsburgh, Cleveland, Detroit, Toledo, Columbus, Cincinnati, Indianapolis, St. Louis, and Kansas City.

Duane Wanamaker, advertising manager, and G. W. Gaidzik, sales promotion department, will conduct meetings in South Bend, Ind.; Grand Rapids, Mich.; Monroe, La.; New Orleans; Houston, Tex.; San Antonio; Dallas; Oklahoma City; and Little Rock, Ark.

H. H. Kunkler and Charles Cappels will meet with distributors in Louisville; Charleston, W. Va.; Bluefield, W. Va.; Richmond, Va.; Norfolk, Va.; Charlotte, N. C.; Chattanooga, Tenn.; Atlanta, Ga.; Jacksonville, Fla.; Americus, Ga.; Birmingham, Ala.; and Memphis, Tenn.

Meetings will be conducted by J. H. Rasmussen and J. Vultor in Milwaukee, St. Paul, Duluth, Des Moines, Omaha, Lincoln, Wichita, and Denver. W. E. Darden, service engineer, will tell Grunow's story in Los Angeles, San Francisco, Portland, Seattle, Spokane, Salt Lake City, and Billings, Mont.

George H. Kiley, service engineer, has a schedule which includes Wilmington, Del.; Trenton, N. J.; and Scranton, Pa.

Jack T. Dalton, service engineer, will cover Wheeling, W. Va.; Altoona, Pa.; Rochester, N. Y.; and Newburgh, N. Y.

Connelly Offers Trip to Leading Salesmen

SPOKANE, Wash. — With a two weeks ocean trip down the West Coast to Los Angeles (with a stop-over in Hollywood) held out to them as a prize, salesmen for the F. B. Connelly Co., Northwest states distributor for Grunow products, applied extra pressure in their sales effort this month.

Their goal is the "Grunow Conclave" to be held at Los Angeles March 10 to 13, and to which they will travel by boat—if they qualify.

To qualify for the trip salesmen must effect the total "mileage" of the trip (2,500 miles) in a contest in which each model in the Grunow line is given a mileage equivalent. The contest opened Jan. 1 and continued to Feb. 28.

175 Dealers Attend Norge Meeting in Oklahoma

OKLAHOMA CITY—Brown Electric Co., Norge distributor here, was host to 175 dealers at a meeting held Feb. 7 to introduce 1934 Norge products and sales plans.

AIR CONDITIONING

Utility Develops New Merchandising Plan

By George Ruck

District Manager, Specialty Appliance Sales Dept., General Electric Co.

The Pacific Gas and Electric Co. of San Francisco has considerable air conditioning load on its lines in office buildings, industrial work, etc. The promotional work on these installations was done largely by architects and engineers.

To ascertain the potential market for comfort cooling and air conditioning for commercial and home use the company in 1933 placed four salesmen in the field and sold the apparatus of a prominent manufacturer.

Results for 1933, and the prospects developed for future sales, were encouraging, but it was felt that with assistance from the utility, the manufacturers' distributors themselves would be in a better position to sell, install, and service their equipment, and 1934 plans were drawn accordingly.

Under these plans, the company has placed six men in that portion of their territory located in the hot Sacramento and San Joaquin Valleys and San Jose.

Men Are Sales Engineers

These men are all sales engineers of the highest type available for the service. They are paid liberal salaries and a commission, and have an allowance for transportation. Their work is entirely promotional. All prospects are filed in division offices and no sales are made by the company nor does it service installations.

Recognizing that a considerable amount of sales expense comes from locating prospects who are in the mood to make immediate purchases, the General Electric air conditioning distributor and some other distributors have agreed to pay the Pacific Gas and Electric Co. a commission of 5 per cent on the selling price of the apparatus, exclusive of installation costs, when made to a prospect given them under an allocation plan described later.

The full amount of this commission is passed on to its salesmen by the Pacific Gas and Electric Co.

Feature of the plan is the method of handling prospects. This is done by the utility division sales managers who allocate them on a percentage basis to the various distributors who have accepted the plan.

The plan requires that the greater percentage of prospects be allocated to the manufacturer's distributing organization most active in its division, both in representation and results, and requires that if any prospect is not actively followed up within 30 days, he shall be referred to another sales organization without releasing the first one from sales or commission responsibility.

Plan Is Flexible

This plan is flexible in that the allocation percentages may be changed at any time, depending upon the activity of a manufacturer and his agents.

In order to qualify for participation in this plan a manufacturer must be adequately and continuously represented by a sales force in the territory, must carry a stock at some point within easy shipping distance of the territory, make prompt installations, and be in a position to service them without delays.

Manufacturers and their representatives are free to solicit business, and in divisions where the Pacific Gas and Electric Co. is not represented by air conditioning men, salesmen will be expected to do so.

Further to promote air conditioning, the Pacific Gas and Electric Co. is planning to give its employees a course in the fundamentals of air conditioning. This course will give a general knowledge of air conditioning, and will be followed later by another course of a semi-technical nature.

De La Vergne Engineers Awarded Medals

PHILADELPHIA — Four engineers of the Baldwin-Southwark Corp. here were recently awarded John Scott medals for their work in developing the De La Vergne air conditioner in 1933. The men are Charles R. Neeson, Harry L. Galson, Hans K. Steinfeld, and Henry C. Heller.

John Scott awards have been made each year since 1869 from a sum of money bequeathed the city of Philadelphia by the Edinburgh chemist in 1816. In addition to the medals, each of the Baldwin-Southwark recipients received \$500.

Owens-Illinois Has New V-Type Filters

TOLEDO—Owens-Illinois Glass Co. here has developed a new "V" type filter frame as an addition to its line of filters for air conditioning.

The "V" frame filter arrangement saves 40 per cent of the frontal area required by the "L" type, or full flat intake face type frame of Owens-Illinois manufacture. This means that 40 per cent more c.f.m. can be handled in the same frontal area with but little added depth requirement.

The filter units are set up in a steel frame, arranged in a series of "V" angles worked out to avoid turbulence of air flow. This added arrangement gives a 40 per cent increase in free air capacity without decreasing filter efficiency and without any increase in the initial or final resistance, engineers of the company declare.

The throat opening into the "V" frame is proportioned to accomplish uniform distribution of air flow over the exposed filter faces, they state.

The new "V" type frame is designed for use with the new "Dustop" filter 20x25x2 in., of 1,000 c.f.m. capacity. A new form of "bayonet lock" is provided in the Owens-Illinois "V" type frame, which places a pressure on the outer edge of the filters to force them back against a flange seat to the discharge face of the filter frames, which gives an air-tight seal between the flexible fibreboard filter cell and the metal frame.

The "Dustop" air filter unit is essentially a mass of spun glass fibres compressed into a closely packed form, coated with a viscous material and enclosed in a fibre-board container, of which the front and back sides are open grid-work, permitting free passage of air. The filter units are light in weight and can be set up in multiple banks in steel frames.

Southern Pacific To Condition More Cars

CHICAGO—Four crack trains of the Southern Pacific railroad will be completely air conditioned in time for the tourist season this summer, according to F. S. McGinnis, vice president in charge of system passenger traffic of that railroad.

The trains to be conditioned are the Overland, Golden State, Sunset, and Cascade; operating between San Francisco, Los Angeles, Portland, Chicago, and New Orleans. These include 22 trains daily, requiring equipment to air condition 80 cars.

Air-conditioned dining cars were placed in service on the Southern Pacific some time ago, and present plans call for installation of additional air conditioning in observation, club, lounge, and Pullman sleepers.

Moto Meter Brings Out Recording Thermometer

LA CROSSE, Wis.—A new recording thermometer, model 500, is now being introduced to the refrigeration industry by the Moto Meter Gauge & Equipment Corp. here.

The thermometer is built in a 7x7½x2¼-in. case, with a pen arm to record temperatures on a 6-in. round chart. It is offered as a portable instrument with a strap handle, or for wall mounting with up to 5 ft. of double-braided flexible capillary tubing.

The temperature-responsive element consists of a Bourdon tube (completely filled with a special liquid), a bulb, and capillary tube. When the bulb is subjected to heat or cold, the liquid content expands or contracts, this action being transmitted through the capillary tube to the Bourdon tube, causing the latter to unwind or wind, moving the pen across the chart.

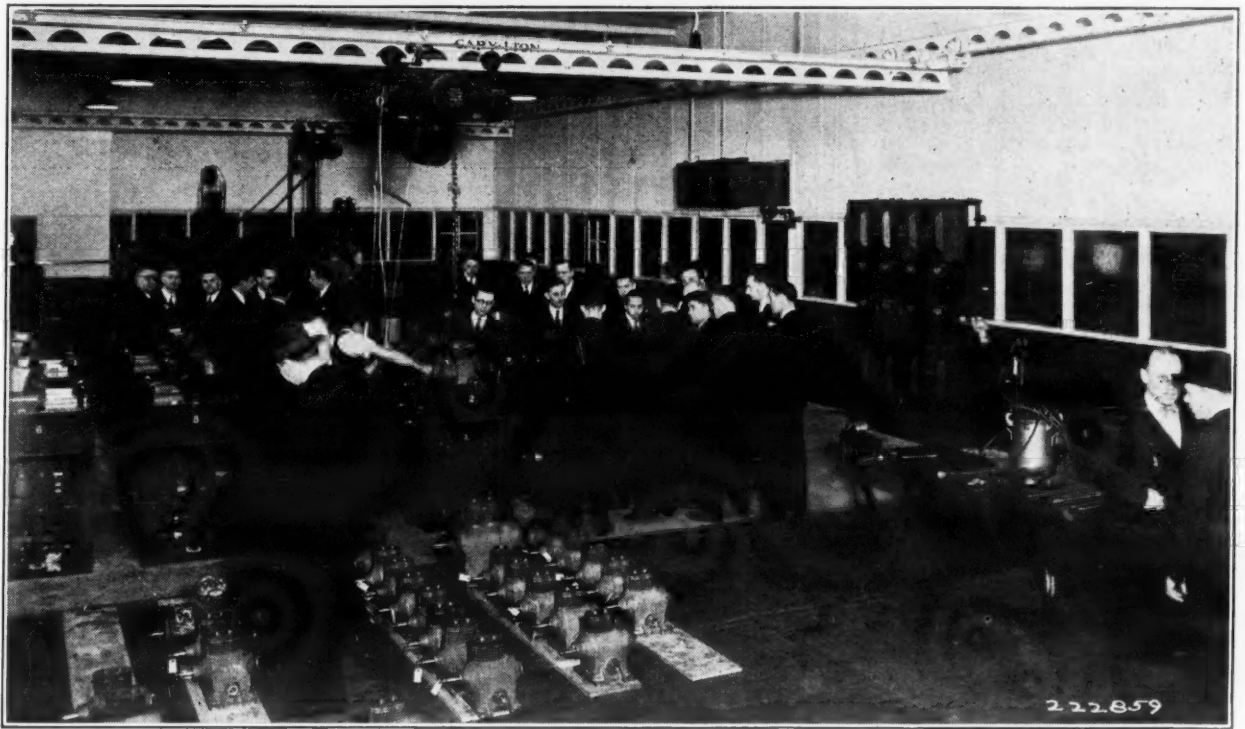
A variety of chart ranges and types of capillary tubing is available to suit various applications.

Grandstaff Joins Carrier Merchandising Staff

CHICAGO—C. H. Grandstaff has been appointed district supervisor in the merchandising department of the Chicago office of Carrier Engineering Corp. He will assist Carrier dealers in promoting their air-conditioning and commercial refrigeration business and will develop new dealer outlets.

Mr. Grandstaff was formerly regional sales manager for the Trupar Mfg. Co., and was associated with the Henry Wies Mfg. Co. of Elkhart, Ind., and the Giant Tire & Rubber Co., Findlay, Ohio.

Building Air Conditioners in an Air-Conditioned Room



Westinghouse air-conditioning dealers inspect the new sealed, air-conditioned room in which air-conditioner mechanisms are assembled at the East Pittsburgh works of the Westinghouse company.

Air Conditioning Provided In Westinghouse Room

EAST PITTSBURGH, Pa.—Air conditioners will be manufactured in a huge air-conditioned room when Westinghouse Electric & Mfg. Co. completes alterations on a large aisle of its plant here, according to J. W.

Speer, sales manager of air conditioning.

In the room's almost dust-free atmosphere, workers will assemble refrigerating units for air conditioners, then seal and test them for leaks before shipping them to distributors.

Approximately \$125,000 is being expended by Westinghouse for plant alterations and installation of the air-conditioning equipment.

The assembly section will be enclosed from floor to ceiling by a paneled partition, glass windows of which will admit a generous amount of natural daylight.

Seventy special machines outside the enclosed section will prepare the parts comprising the refrigerating units. These parts will be carried by conveyors into the air-conditioned section for assembly.

We have always avoided the temptation of advertising our products as "the best". We realize that no company has a monopoly on brains and manufacturing facilities. We are content in pointing out that no units give more dependable service than those produced by Universal Cooler.



UNIVERSAL COOLER CORPORATION
DETROIT, MICHIGAN BRANTFORD, ONTARIO

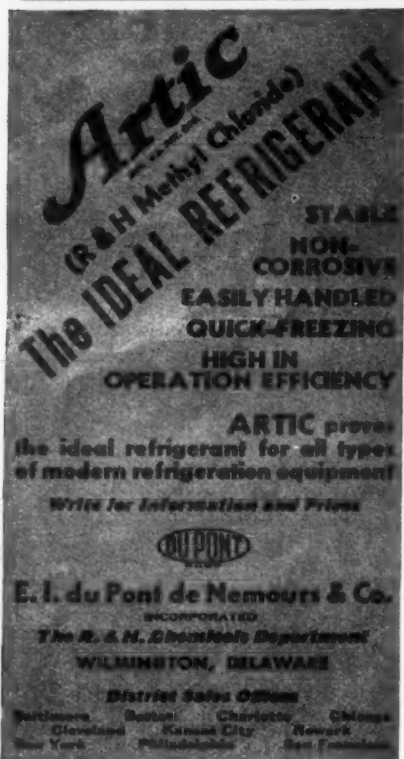
MANUFACTURERS OF A COMPLETE LINE OF HOUSEHOLD AND COMMERCIAL REFRIGERATION EQUIPMENT

Faithful Service . . .

An organization attains leadership through the faith it engenders by the work it performs. A superior service can be maintained only by constant alertness and progressiveness.

We are constantly serving the Electric Refrigeration Industry with a superior training that is recognized as being dependable and indispensable.

UTILITIES ENGINEERING INSTITUTE
Wells at Kinzie Street, Chicago, Ill.
Complete Refrigeration Training By Extension Methods. Eighth Year.



Artie
STABLE
NON-CORROSIVE
EASILY HANDLED
QUICK-FREEZING
HIGH IN
OPERATION EFFICIENCY

ARTIE proves the ideal refrigerant for all types of modern refrigeration equipment.

Write for information and prices.

E. I. du Pont de Nemours & Co.
INCORPORATED
The R. & M. Chemical Department
WILMINGTON, DELAWARE

District Sales Offices:
Baltimore, Boston, Chicago, Cleveland, Kansas City, New York, Philadelphia, St. Louis, San Francisco.

**COMPANION
MERCHANDISE****St. Louis Radio Men
Join Board of Trade**

ST. LOUIS—The St. Louis Radio Trades Association has consolidated its activities with the St. Louis Electrical Board of Trade under the latter's name.

Reason for the change, according to William P. Mackle, former managing director of the radio trade association and now director of appliance sections for the Electrical Board of Trade, is that firms which formerly sold radio exclusively, have so diversified their lines that they handle all major appliances.

This change complicated the industry's collective activity inasmuch as it found part of the industry represented in a Radio Trades Association and part in the Electrical Board of Trade.

Eight sections of the association are being organized to cover appliance activities: retail refrigerator, retail radio, retail washer and ironer, retail range, wholesale refrigerator, wholesale radio, wholesale washer and ironer, and wholesale range.

Mr. Mackle sees in the union of the two groups possibilities for annual sales campaigns on all major appliances similar to the drive conducted by the Refrigeration Bureau. It will also give the group greater authority before the NRA compliance board. An electrical show is also being planned.

Officers of the Electrical Board of Trade are: P. B. Postlethwaite, Wagner Electric Corp., president; G. K.

Miltenberg, Union Electric Light & Power Co., vice president; G. H. Querman, American Telephone & Telegraph Co., vice president; Frederic A. Kehl, Federal-Brilliant Co., treasurer; and Mr. Mackle.

The radio and appliance sections will be represented on the executive committee by the following: A. C. Brandt, Brandt Electric Co.; D. R. Cohen, Glasco Electric Co.; George Corroa, Graybar Electric Co.; L. H. Egan, Union Electric Light & Power Co.; C. B. Fall, C. B. Fall Co.; E. Gosling, Laclede Power & Light Co.; E. L. Markland, Mack Electric Co.; C. E. Michel, Union Electric Light & Power Co.; and E. D. Payne, General Electric Co.

**Kelvinator Oil Burners
To Be Exhibited**

DETROIT—Kelvinator Corp. has reserved space for the eleventh national oil burner show to be conducted by the American Oil Burner Association at the Commercial Museum in Philadelphia, March 5 to 9.

At that time only the Kelvinator continuous variable flame burner and conventional intermittent burner will be shown. Probably the company's entire line of oil-burning equipment, gas-heating equipment, oil-burning water heaters and complete winter air-conditioning units will not be ready for display at the show.

The Kelvinator exhibit in Philadelphia will be in charge of J. M. Knox.

**Colonial Stove Sells
Complete Kitchen
Ensembles**

PHILADELPHIA — Colonial Stove Co. of this city is announcing that it is now ready to market complete kitchen ensembles, including refrigerator cabinet, range, sink, drainboard, working surfaces, splashers, wall cabinets and floor cabinets.

The ensembles range in price from \$115 to \$350, with the average retail price in the neighborhood of \$350.

Distribution of the ensembles, according to Colonial Stove Co. officials, will be through the wholesaler-dealer type of operation that is typical in the distribution of electric refrigerators.

Dealers may choose ensembles which include neither a range nor a refrigerator cabinet.

Built of porcelain-steel, the units do not become a part of the real estate; finance companies will handle the paper therefore, as repossessions are possible.

Manufacture and assembly of all the various units is one plant, Colonial Stove Co. officials declare, makes possible the design of kitchens in which straight-line production in meal preparations will be the aim. Such an arrangement also makes possible "stream lining" and perfect color matching.

Each unit is packed separately. This enables the distributor to warehouse the units as he does radios, refrigerators or ranges. The units required for an ensemble are shipped from the distributor's stock to the job, where the distributor's crew (which will include a registered plumber) erects the ensemble.

When a dealer selects an ensemble which includes neither a range nor a refrigerator cabinet unit, he can display the refrigerator and range which he is selling along with the Colonial ensemble and thus present a model electric kitchen.

The ensembles may be sold step-by-step, that is the dealer can merchandise the various parts of the ensemble piece-by-piece. The plan of selling is practical, for the color of porcelain does not change.

In connection with its plan, Colonial Stove Co. has prepared a catalogue with detailed plans on 19 different ensembles.

**Gar Wood Appoints New
Distributors**

DETROIT—National Electrical Supply Co. of Washington, D. C., has been added to the distributing organization for Gar Wood oil burners, according to C. J. McCaffrey, sales manager of the Gar Wood boiler division of the Wood Hydraulic Hoist & Body Co. of this city.

Other recently appointed distributors are H. A. McRae & Co., Inc., Troy, N. Y., and Radio Distributing Co. of Detroit.

**Zenith Makes Pressley
Chief Engineer**

CHICAGO—Jackson H. Pressley has been appointed chief engineer of the Zenith Radio Corp.

Mr. Pressley has been connected with the radio industry since its inception and before that was connected with the radio laboratories of the U. S. Army Signal Corps.

**Westinghouse Brings
Out Console Ranges**

MANSFIELD — Just introduced by Westinghouse Electric & Mfg. Co. are two new "styled" console electric range models, designated as models E-64 and E-63.

Principal feature of the new models is the incorporation of the "dual automatic" control featured in the buffet models.

A modern streamline design, expressed by softening lines of full rounded construction, has been adopted for these two new models. The appearance has also been enhanced by a back splasher of unusual height and design.

The range is finished in ivory porcelain enamel, with an acid-resisting platform.

The units consist of: oven, top, 1500 watts; bottom, 1500 watts; platform, one 6-in. 1,200 watt unit, one 6-in. 1,000-watt unit, one 8-in. 1,500 watt unit, and one 8-in. 2,000-watt unit. The appliance receptacle is wired for 660 watts and is automatic time-controlled.

Both models have simplified single switch oven control, which makes it possible to control the oven units by a single switch. A utility drawer is built in below the heater platform to provide space for cutlery and small kitchenware.

The appliance receptacle is placed in the oven top panel, near the thermometer.

The oven is standard full 16 inch, one piece construction, fully enameled, all rounded corners.

**National Oil Burner
Show Will Have
G-E Exhibit**

SCHENECTADY—A complete line of oil furnaces and air-conditioning equipment for winter, summer, and all-year use will be displayed by the air-conditioning department of General Electric Co. at the 11th National Oil Burner Show, to be conducted by the American Oil Burner Association March 5 to 9 at the Commercial Museum, Philadelphia.

There will also be special exhibits to show the atomization principle of the G-E oil furnace, a cutaway of the furnace, a winter air conditioner with glass sides, and a specially mounted and operating G-E air conditioner for radiator-heated homes.

**500 Copelands Installed
In Kresge Stores**

DETROIT—Copeland commercial refrigeration systems are being used to refrigerate equipment in the delicatessen departments which S. S. Kresge Co., nation-wide 5 and 10 chain store organization, has been installing in its leading stores during the past six months.

Approximately 500 Copeland systems have been installed in Kresge stores during the latter part of 1933 and first part of 1934.

The Copeland units, powered by 1/4-hp. motors, are used to refrigerate a top display delicatessen refrigerated counter, in which delicatessen items are displayed.

Temperatures of from 46° F. to 48° F. are being maintained in the single glass display case, which has a low-set back bunker coil and a pitched bottom to provide proper circulation of the cold air.

The Mark of TOP Quality...



Monel Metal distinguishes the leading makes of ice cream cabinets. Here's an example... by Anheuser-Busch

Look over the leading ice cream cabinets. Those with the biggest production, the widest sales.

What an eyeful of Monel Metal tops!

A Typical Example

Anheuser-Busch, Inc., assures purchasers of their mechanical cabinets the obvious advantages of Monel:

1. Attractive appearance.
2. Easy cleaning.
3. Freedom from rust.
4. Resistance to corrosion.

Monel Metal is strong as steel and with-

stands the hard knocks of daily use. It is a solid metal, without any surface coating to chip, crack or wear off. It is tough, and its silvery beauty is not injured by gritty cleansers.

In addition, Monel Metal is readily fabricated: formed, drawn, welded and soldered...all of which helps to simplify the work of manufacturing cabinets of the high grade type shown here.

Write for information.

**THE INTERNATIONAL
NICKEL COMPANY, INC.**
67 WALL ST., NEW YORK, N. Y.



Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.



MONEL METAL

Good Wishes to COPELAND

*Thousands of Copeland Commercial
Units all over the world, testify,
day in and out, to the efficiency of Larkin Coils*

WAREHOUSES
Brooklyn - Chicago



Originator and
Manufacturers
ATLANTA, GA., U.S.A.

U.S. PATENT No. 1,776,335

LARKIN COILS



Left to right: (1) Copeland dealers will get to know his signature. R. T. Gmelich, manager of service repairs. (2) J. W. Jenkins, factory superintendent, watches some Copeland commercial units on test. (3) Copeland's General Manager H. O. Seltam keeps up on industry news. (4) A. G. Watkins, purchasing agent. (5) W. G. von Meyer is commercial sales manager for Copeland.

Winslow New Head Of Copeland

(Concluded from Page 1, Column 4)
pany is a subsidiary. Since August, when Winslow-Baker-Meyering first became interested in Copeland, there has been considerable speculation

about the nature and personnel of the firm that was backing the Copeland reorganization.

Last week, in an interview with representatives of ELECTRIC REFRIGERATION NEWS, Mr. Winslow related the story of Winslow-Baker-Meyering Corp.

The firm was founded 15 years ago as Dallas E. Winslow, Inc. Mr. Winslow had previously been connected with a finance company in Flint, Mich. In 1931, when R. G. Meyering and L. H. D. Baker became members of the firm, the corporate name was changed to Winslow-Baker-Meyering Corp.

The firm is engaged in "manufacturing and refinancing," in the words of Mr. Winslow. Five manufacturing plants in addition to Copeland are now being operated as subsidiaries, these including:

Kellogg Mfg. Co., Rochester, N. Y., manufacturer of compressors for household refrigerating machines and air compressors.

Barnes Mfg. Co., Mansfield, Ohio, manufacturer of plumbing supplies.

Good Roads Machinery Corp., Kennett Square, Pa., rock crushing machinery and snow plows.

Maccar Motor Truck Co., Scranton, Pa., motor trucks.

Osgood & Sons, Decatur, Ill., lady's ready to wear, cotton dresses, etc.

Mr. Winslow is president and treasurer of Winslow-Baker-Meyering Corp. Mr. Meyering is vice president and secretary. Before joining Mr. Winslow he was head of the Meyering Land Co., with real estate operations in Detroit, Chicago, Los Angeles, and Minneapolis. Mr. Baker, the third member of the firm, resigned an executive position with the National Bank of Commerce of Detroit in 1931 to join Mr. Winslow.

Mr. McKaig, assistant secretary and treasurer, is in charge of all manufacturing operations, including Copeland, for Winslow-Baker-Meyering Corp. Mr. McKaig has been connected with Mr. Winslow since the latter incorporated his company 15 years ago.

In active charge at the Copeland plant under the direction of Mr. McKaig will be General Manager H. O. Seltam. Mr. Seltam has been employed by Winslow-Baker-Meyering Corp. and its predecessor, Dallas E. Winslow, Inc., for the past nine years. For a time he was assistant secretary and treasurer of Zerozone Corp. He has held executive positions with the Stearns Knight Motor Co. and the Peerless Motor Co.

W. S. Grant, manager of household refrigeration sales, started his career as an engineer but has had sales experience in diversified fields. He has been connected with the Dover Mfg. Co. at Dover, Ohio, manufacturer of electrical appliances; the American-LaFrance Co., manufacturer of fire-fighting equipment; the Federal Motor Truck Co. as manager of its Memphis branch, and with an oil burner manufacturing firm.

In W. G. von Meyer, Copeland Refrigeration Corp. has a commercial sales manager and head of the national user's department who can boast 10 years close alliance with the selling of refrigeration products.

Mr. von Meyer's affiliation with the refrigeration industry began in 1923, when he joined the Nizer Corp. He first served as statistician for the ice cream cabinet division of Nizer, and at one time probably had a better grasp of the "market situation" for ice cream cabinets than anyone in the industry.

When Nizer merged with Kelvinator Corp. Mr. von Meyer joined the ice cream cabinet sales department of the later company, remaining with Kelvinator until 1928.

He left Kelvinator to help found the Valerius Corp. at Jefferson, Wis., manufacturer of soda fountain equipment. He was sales manager and later general manager of Valerius Corp.

In the fall of 1932 he joined Copeland Products, Inc., as head of the national users' department. When the new owners took over the business he was asked to remain in charge of this department, and succeeded in retaining and further developing such contract business as Anheuser-Busch, Inc., and S. S. Kresge Co.

During the latter part of 1933 he was appointed commercial sales manager.

E. C. Haight, chief engineer, and

J. W. Jenkins, factory superintendent, are two real veteran Copeland employees, both having been connected with Copeland plant operations for nine years. Mr. Haight has worked up from factory service department ranks to the topnotch position in the engineering department. Mr. Jenkins has worked on almost every job in the assembly of Copeland units.

R. T. Gmelich is manager of service repairs, joining Copeland last year.

Suppliers will discover a familiar name when they deal with A. G. Watkins, chief purchasing agent for Copeland Refrigeration Corp., for he has two brothers who hold similar positions with other firms in the industry.

Brother P. P. Watkins is chief purchasing agent of Kelvinator Corp., and Brother C. L. Watkins is comptroller of Norge Corp.

Cheaper Dollar Aids Copeland Exports

DETROIT—Cheapering of the dollar has brought renewed interest in American-made refrigeration products on the part of foreign distributors, declares H. M. Robins, head of the H. M. Robins Co., exporting house for Copeland Refrigeration Corp.

An order from Czechoslovakia that may total 100 commercial condensing units when completed is exemplary of the increasing interest on the part of foreign buyers. Other foreign countries where importers are placing more orders include Holland, Belgium, Spain and France, Mr. Robins said.

Due to the cheapening of the dollar, prices for American refrigerators are

expressed in terms of foreign currency have been reduced almost 50 per cent as compared to price schedules prevailing in the early part of 1933, Mr. Robins declares.

Also, importers have found it easier to buy American dollars, in which most U. S. exporters demand payment. Previously, some foreign importers found it necessary to buy dollars through "bootleg" channels.

Copeland Again Standardizes on

Artic

REG. U. S. PAT. OFF.
(DUPONT METHYL CHLORIDE)

as the refrigerant for its domestic and commercial units.

Specify ARTIC for

- Dependability
- Economy
- Efficiency

ARTIC is non-corrosive to ordinary refrigeration equipment, even if moisture should get into the system. It is easily handled and serviced. It is manufactured to rigid specifications—low in moisture and acidity. Adequate stocks strategically located throughout the country assure prompt shipment.



Ref Chemicals

The R. & H. Chemicals Dept.
E. I. du Pont de Nemours & Co., Inc.
Wilmington, Del.

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

Congratulations to Copeland

We salute the new Copeland and are happy to announce that
PENN CONTROLS
are scheduled as standard equipment throughout the entire line.

Penn Electric Switch Co.

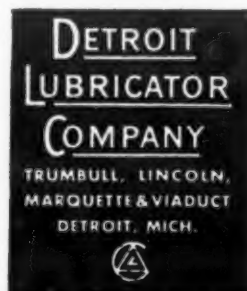
Des Moines, Iowa

Complete line:-

Controls and Water Valves for Household and Commercial Refrigeration

The new line of Copeland Domestic and Commercial Refrigerating Units will use

Genuine Detroit Automatic and Thermostatic Expansion Valves as standard equipment.



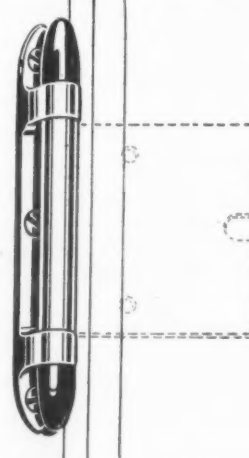
Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Modern Hinges and Handles



We illustrate the chrome-plated handle and hinge to be used on the 1934 Copeland Domestic Refrigerators.

This hardware accentuates the beauty of, and forms a striking trim on the gleaming white surface of these refrigerators.



We manufacture

Butts and Hinges

Brass in all known finishes
Steel—Brass-plated—Nickel-plated—Chromium-plated

Bolts

Carriage and fin head bolts
Hanger Bolts—Stove Bolts
Lag Screws—Chair Rods

Immense stocks of regular numbers. Quotations promptly furnished on special designs upon receipt of sample, blue print or sketch.

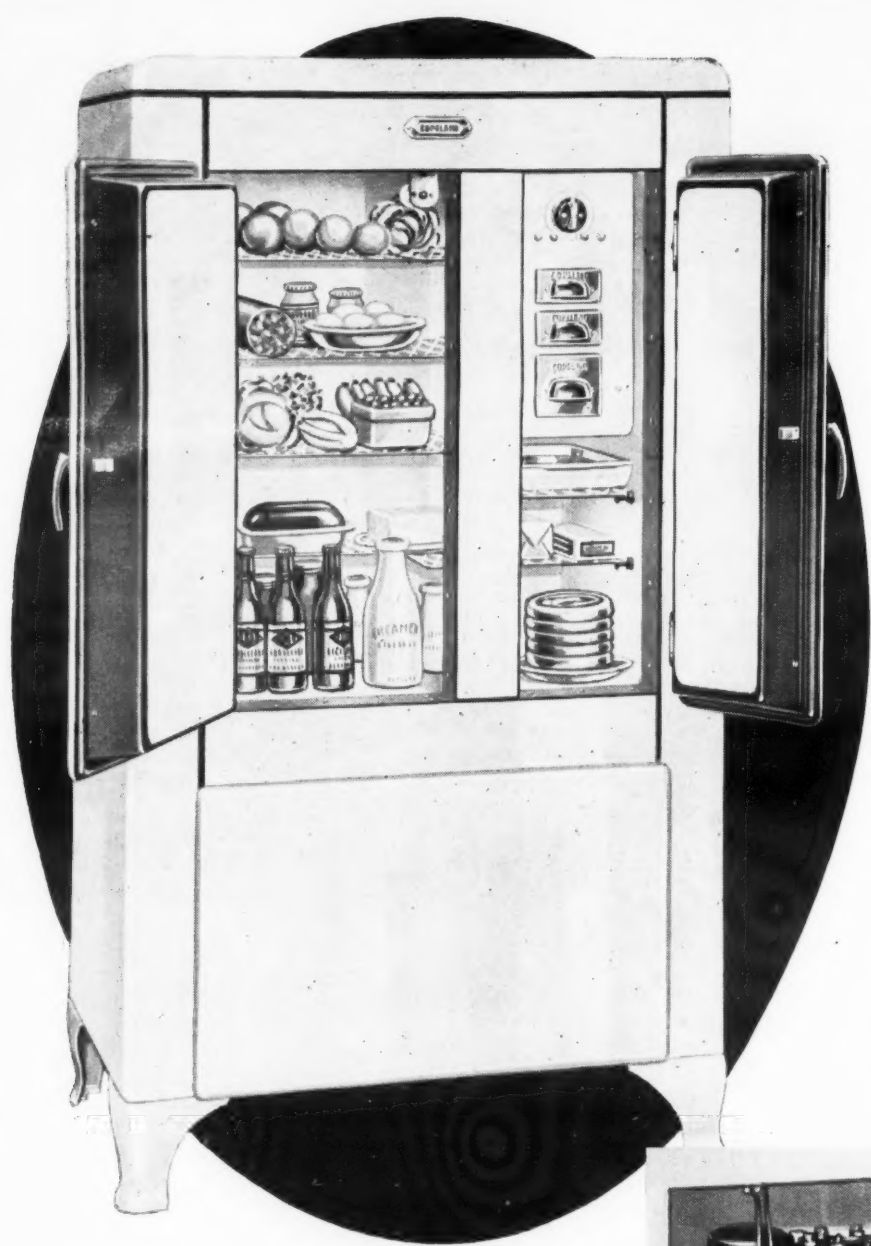
NATIONAL LOCK COMPANY

Rockford

Illinois

The NEW COPELANDS

You are sure to like them



MODEL P 854

Porcelain finished inside and out; gross food storage 8.46 cubic feet; net 7.42 cubic feet; 4 shelves with 14.1 sq. ft. area; 3 trays; 108 ice cube capacity; rubber tray; Coldial control; interior illumination; Copeland COLDHOLD.

JUST what the trade has waited for; a popular-priced line of practical-sized, good-looking refrigerators . . . Built right, priced right, with the *right* discounts to build volume business for the distributor and Copeland.

Distributors who qualify for a 1934 franchise with Copeland will have everything in their favor. A splendid product; sturdily built; attractive in appearance; *not experimental*; a one year guarantee and protected territory.

Everything an up-to-date merchandiser could want.

The public like Copelands. They will like this new line. They will like the adequate sizes offered at reasonable prices . . . The low up-keep cost . . . The simplicity of Copeland . . . Its sensible shelf arrangement . . . The interior illumination . . . The simple COLDIAL control.

THERE IS A DECIDED PREFERENCE FOR COPELAND. CASH IN ON IT DURING 1934

Preliminary announcements of Copeland's position have brought in inquiries from distributors everywhere who realize the hundreds of thousands of Copeland refrigerators the world, have created good-will for Copeland.

Copeland welcomes newcomers into its organization yet is proud of the fact that up to 85% of its distributors of 1932 have elected to remain with new Copeland.

Consider These

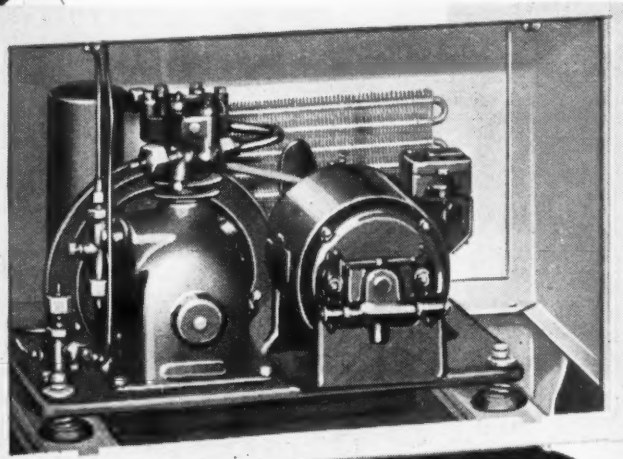
Copeland is a strong, well-financed corporation in the refrigeration industry.

It is manufacturing superb merchandise at a reasonable price.

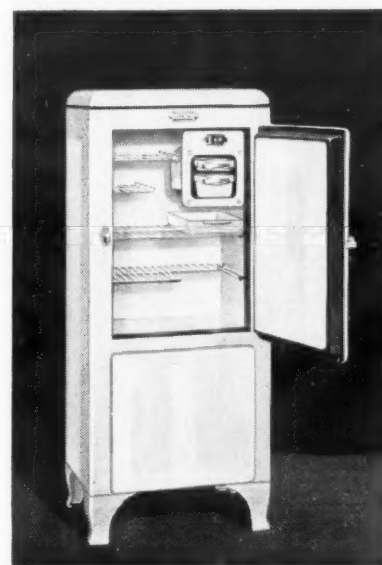
It has veteran engineering skill, excellent manufacturing facilities, experienced personnel and definite co-operation with the trade.

SOME TERRITORY IS STILL OPEN. WRITE OR WIRE FOR DETAILS.

You'll like this! . . . The new Copelands have the popular belt-driven, bottom-mounted condensing unit. This is the identical unit, with some refinements, on which Copeland demand was created.



The model A-1 1/6 H.P. Methyl Chloride Condensing Unit used in Copeland's 1934 Domestic line.



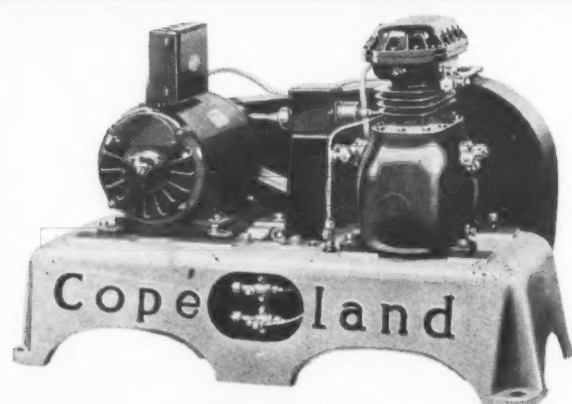
MODEL 454

Lacquer outside, porcelain inside; gross food storage 4.42 cubic feet; net 3.96 cubic feet; 4 shelves with 8.3 sq. ft. area; 2 trays; 77 ice cube capacity.



MODEL 604

Lacquer outside, porcelain inside; gross food storage 6.81 cu. ft.; net 6.25; 4 shelves with 9.0 sq. ft. area; 3 trays; 100 ice cube capacity; interior illumination.



MODEL Z-3 H.P. Water Cooled

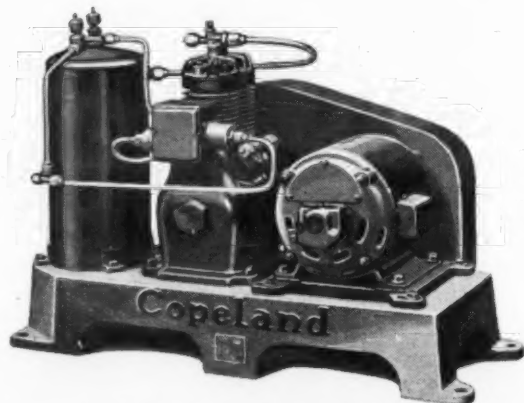
Copeland COMMERCIAL

21 models . . . a size for every purpose

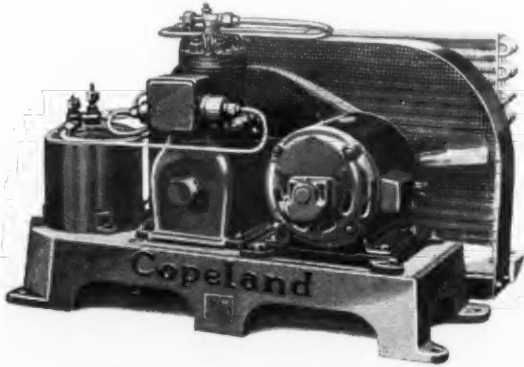
Copeland's complete line of Commercial Units includes suitable equipment for every purpose. Our range of sizes provides capacities from 100 lbs. I.M.E. to 3250 lbs. I.M.E. per 24 hours, according to A. S. R. E. rating.

Air and water-cooled units are available. One, two and three cylinder compressors comprise the line. Every unit is carefully engineered for its precise duty and built to the most exacting tolerances.

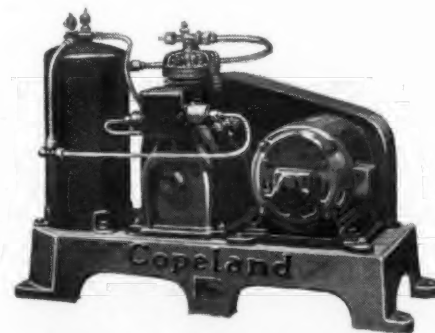
The Copeland line includes any type of commercial purpose or for driving I.M.E. motors.



MODEL V-1 1/2 H.P. Water Cooled



MODEL WA-1 H.P. Air Cooled



MODEL W-3/4 H.P. Water Cooled



MODEL SA-1 H.P. Air Cooled

COPELAND REFRIGERATION CORPORATION, M

When corresponding please give full details of your organization and

DEPENDABLE ELECTRIC

Where they are!

Make them

ts of Copeland's policy and brought inquiries and everywhere realize that Copeland operators, all over the world will be famous.

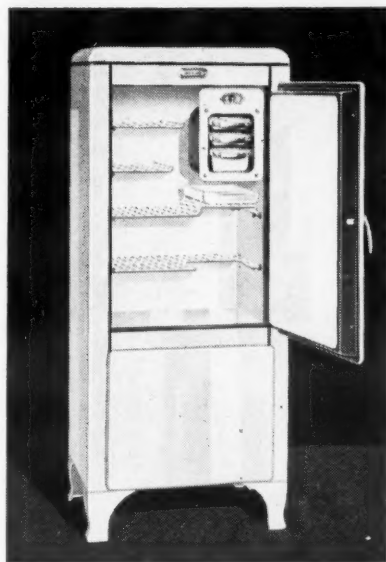
mers into organization and that up to 85% of the elected along with the

These financial part of the

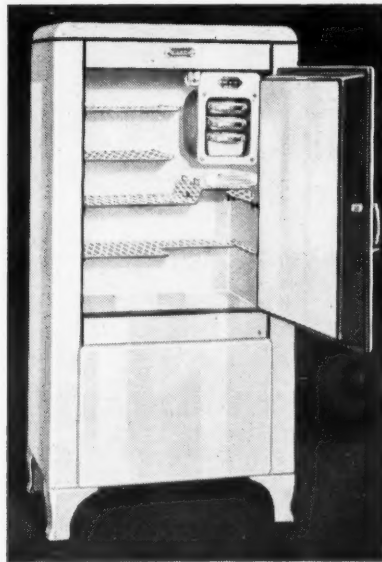
rb merchandise to sell at a

skill, excellent manufacturing personnel and definite policy of

RY IS OPEN
IRE FOR AILS



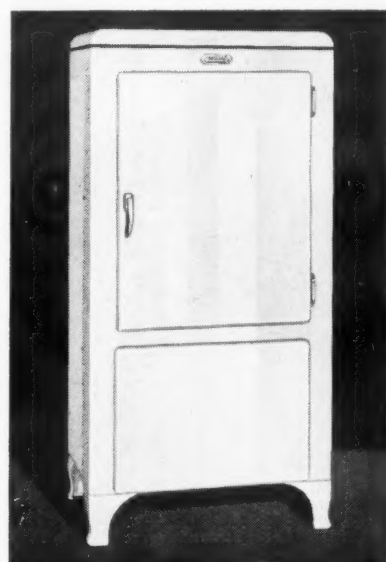
MODEL P 604
Porcelain, inside and out; gross food storage 5.81 cu. ft.; net 5.25; 4 shelves with 9.0 sq. ft. area; 3 trays; 105 ice cube capacity; interior illumination.



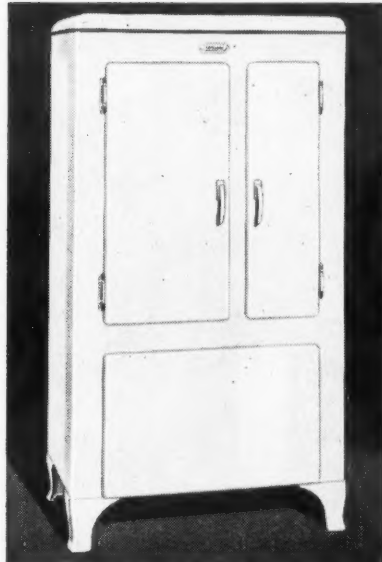
MODEL P 704
Porcelain, inside and out; gross food storage 6.95 cu. ft.; net 6.41; 4 shelves with 10.8 sq. ft. area; 3 trays; 105 ice cube capacity; interior illumination.



MODEL L 604
Lacquer outside, porcelain inside; gross food storage 5.81 cu. ft.; net 5.25; 4 shelves with 9.0 sq. ft. area; 3 trays; 105 ice cube capacity; interior illumination.



MODEL L 704
Lacquer outside, porcelain inside; gross food storage 6.95 cu. ft.; net 6.41; 4 shelves with 10.8 sq. ft. area; 3 trays; 105 ice cube capacity; interior illumination.



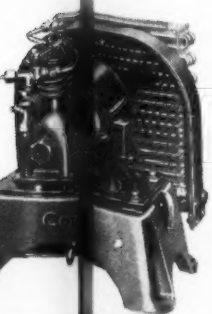
MODEL L 854
Lacquer outside, porcelain inside; gross food storage 8.46 cu. ft.; net 7.42; 4 shelves with 14.1 sq. ft. area; 3 trays; 108 ice cube capacity; interior illumination.

COMMERCIAL UNITS

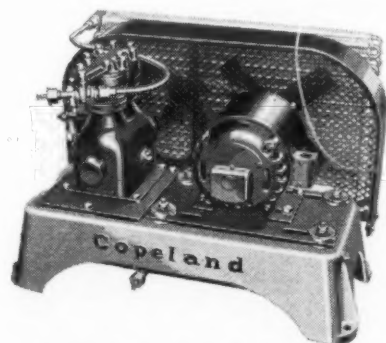
Propose.

The Copeland line enables distributors to refrigerate any type of commercial equipment intended for trade purposes or building installations. We also furnish drive driven units from 246 to 1073 lbs. I.M.E. hours.

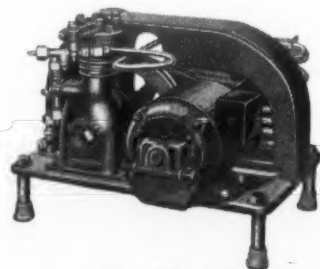
Copeland distributors have the privilege of a complete franchise, for domestic and commercial lines inclusive, if qualified to handle both divisions, or they may be granted either the Domestic or Commercial franchises for their territory.



MODEL S 1/2 H.P. Air Cooled



MODEL R 1/2 H.P. Air Cooled



MODEL AM 1/4 H.P. Air Cooled

Export Department
H. M. Robins Co.
Madison Ave., Detroit

ATI, Mt. Clemens, Mich.

REFRIGERATION

ANHEUSER-BUSCH



MECHANICAL CABINETS

ANHEUSER-BUSCH Inc. offers its

Mechanical Ice Cream Cabinets
Beer Dispensing and Storage Equipment
Refrigerated Truck Bodies

as splendid complementary equipment to Copeland's Commercial Condensing Units.

The inclusion of these Anheuser-Busch products broadens the field of the refrigeration distributor and provides an added source of profit for aggressive merchandisers.

Anheuser-Busch ice cream cabinets are made in all standard sizes, from one hole up, and in combination for bottled goods.

Long life is built into them. Their construction comprises rigid moisture-proof casings; pure corkboard insulation; heavy copper-sealed brine tanks, sleeves, etc.; removable monel metal rim seals; top lids and trim of monel metal; outside finish, lustre black baked enamel.

The direct expansion METHYL CHLORIDE CONDENSING UNITS ARE BUILT TO ANHEUSER-BUSCH SPECIFICATIONS BY COPELAND REFRIGERATION CORPORATION, AND CARRY THE COMBINED GUARANTEES OF BOTH COMPANIES.

In the cabinet, the Methyl Chloride is expanded in an American Radiator Expansion Valve. It is passed through continuous copper coils submerged in brine and extends around the entire sleeve assembly. This assures even temperature throughout, which is governed by the selective temperature thermostatic control.



The economy and efficiency of these cabinets have established the standard for refrigeration in the ice cream world.



There is desirable territory available for distributorships and we invite correspondence from responsible parties to handle our refrigeration equipment.

Address: Oliver E. Shaw, Manager
Refrigeration Division
ANHEUSER-BUSCH INC.
ST. LOUIS

Mechanical Ice Cream Cabinets—Refrigerator Truck Bodies and Solid Carbon Dioxide Shipping and Storage Cases.



A Satisfied Customer Repeats!

Copeland Household Refrigerators and Commercial Units are equipped with Commonwealth Seepage-Proof Tube and Pipe Fittings.

Ever since Copeland first made its bow to the public we have supplied our fittings; to the satisfaction of the user and the Copeland management.

Commonwealth Fittings, "Built Right to Stay Tight" are made in an infinite variety of sizes, for every conceivable refrigeration installation.

Send for descriptive Catalog

**COMMONWEALTH
BRASS CORPORATION**
COMMONWEALTH AND G.T.R.R.
DETROIT

A TRIBUTE TO THE FIRST USER OF Flexible Rubber Freezing Trays



Copeland was the first manufacturer of mechanical refrigerators to make use of flexible rubber freezing trays as original equipment and as a sales aid to dealers. Copeland has continued to use these modern trays since they were first introduced.

And now—with the announcement of the new 1934 Copelands—we wish to compliment the Copeland management upon its new product and extend our best wishes for every success.

THE INLAND MFG. COMPANY

MANUFACTURER OF FLEXIBLE RUBBER TRAYS AND GRIDS

DAYTON, OHIO



Ice Cubes the Modern Way

Specifications of Copeland Commercial Machines

Copeland Refrigeration Corp., 332 Cass Ave., Mt. Clemens, Mich.

Model No.	IC-1	IC-2	IC-3	A-1-L	AM	Q	Q-2	QW-2	R	RW	SA	W	WA	X	XA	V	Y	Z
Overall Dimensions (in.)																		
Width	14	14	21½	21	21	28½	28½	28½	28½	28½	28½	38½	38½	38½	39½	38½	47½	47½
Depth	14½	14½	11½	17	17	17½	17½	14½	17½	14½	18	18½	23½	18½	23½	18½	21½	21½
Height	25½	25½	26½	16	16	19	19	18½	19	18½	19	27½	24½	27½	24½	27½	30	30
Refrigeration Capacity																		
In lbs. I.M.E. per 24 hours	99	212	488	100	212	246	375	375	488	488	640	776	776	1073	1073	1600	2375	3250
Compressor Specifications																		
Compressor speed (r.p.m.)	360	360	440	360	360	440	300	300	440	440	640	250	250	365	365	500	365	500
No. of cylinders	1	1	2	1	1	1	2	2	2	2	2	2	2	2	2	2	2	3
Bore (in.)	1½	1½	2	1½	1½	2	2	2	2	2	2	2½	2½	2½	2½	2½	2½	3
Stroke (in.)	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	3	3	3	3	3	4	4
Motor size (hp.)	¾	¾	1½	¾	¾	1½	¾	¾	1½	1½	2	¾	¾	1	1	1½	1½	2
Quantity of refrigerant in system (lbs.)	2	2	2	2	2	5	5	5	5	5	5	5	5	5	5	5	10	10
Pump down capacity of receiver (lbs.)	2	2	2	2	2	5	5	5	5	5	5	5	5	5	5	5	10	10
Quantity of oil in system (pts.)	2	2	2	2	2	5	5	5	5	5	5	5	5	5	5	5	10	10

Compressor	
Type of system	Conventional
Type of compressor	Reciprocating
Compressor drive	Belt
Type of shaft seal	Models Y & Z—water; all others—air
Motor	
Make of motor	Delco
Refrigerant	
Kind used	Methyl chloride
Condenser & Liquid Receiver	
Method of cooling	Models QW-2, RW, W, X, V, Y, Z—water; others—air
Type of condenser	models—finned tube; others—shell & tube
Type of liquid receiver	Models Q, Q-2, QW-2, R, RW—horizontal; all others—vertical
Have fusible plug	Models A-1-L, AM, IC-1, IC-2, IC-3—no; all others—yes
Control	
Make of control	Penn
Type of control	Pressure & temperature
High pressure cut-out	water cooled models
Point of operation of cut-out	175 lbs.
Condensing water flow controlled by	Pressure regulating valve
Valves	
Type of piston valves	Disc
Type of discharge valves	Disc
Type of water valve	Pressure
Materials Used	
Cylinder block	Semi-steel
Pistons	Semi-steel
Condenser tubes	Copper
Condenser shell	Steel

Copeland's Household Refrigerator Specifications

Copeland Refrigeration Corp., 332 Cass Ave., Mt. Clemens, Mich.

Model No.	454	L604	P604	L704	P704	L854	P854
Cabinet Specifications							
Overall dimensions (in.)							
Height	55½	61½	61½	63½	63½	64½	64½
Width	24	26	26	31½	31½	35½	35½
Depth	20½	21½	21½	23½	23½	24½	24½
Inside dimensions of liner (in.)							
Height	26	31	31	30½	30½	30½	30½
Width	20½	20½	20½	24½	24½	27½	27½
Depth	14½	15½	15½	16½	16½	17½	17½
Storage Capacity							
Gross food storage (cu. ft.)	4.42	5.81	5.81	6.95	6.95	8.46	8.46
Net food storage (cu. ft.)	3.96	5.25	5.25	6.41	6.41	7.42	7.42
No. of shelves	4	4	4	4	4	4	4
Total shelf area (sq. ft.)	8.3	9.0	9.0	10.8	10.8	14.1	14.1
Ice Cube Trays							
No. of trays	2	3	3	3	3	3	3
No. of ice cubes produced	77	105	105	105	105	108	108
Weight of ice cubes (lbs.)	5	6½	6½	6½	6½	6½	6½
Thickness of Insulation (in.)							
Top	2	2½	2½	3½	3½	4	4
Sides	2	2½	2½	3½	3½	4	4
Bottom	2	2½	2½	3½	3½	4	4
Compressor Specifications							
Capacity (lbs.) I.M.E.	100	100	100	100	100	150	150
Motor size (hp.)	¾	¾	¾	¾	¾	¾	¾
Compressor speed (r.p.m.)	360	360	360	360	360	360	360
Compressor bore (in.)	1½	1½	1½	1½	1½	1½	1½
Compressor stroke (in.)	1½	1½	1½	1½	1½	1½	1½
No. of cylinders	1	1	1	1	1	1	1
Cabinet Materials							
Make of cabinet	Truscon & Lima Sheet Metal						
Material used for frame	Steel & wood						
Finish of shelves	Tinned						
Material used for breaker strip	Wood & rubber						
Material used for gasket	Molded rubber						
Make of insulation	Balsam Wool						
Finish							
Cabinet finish (exterior)	Model 454 & L-604—lacquer; others—porcelain						
Cabinet finish (interior)	Porcelain						
Hardware							
Process of manufacture	Forgings & stampings						
Basic metal of hardware	Brass						
Finish of hardware	Chromium						
Compressor							
Make of compressor	Copeland						
Type of system	Conventional						
Type of compressor	Reciprocating						
Compressor drive	Belt						
Type of shaft seal	Models Y & Z—water; all others—air						
Location of compressor	Below						
Refrigerant							
Refrigerant used	Methyl chloride						
Amount in system	1 lb.						
Lubrication							
Brand of compressor lubricant	Shell No. 3						
Quantity in system	5 pts.						
How often should motor be oiled	Every 6 months						
Control							
Make of control	Penn						
Type of control	Temperature						
Temperature regulation method	Manual						
How defrosted	Defrost position on control						
Motor							
Make of motor	Delco						
Evaporator							
Make of evaporator	Copeland						
Evaporator construction	Tubing over sleeve on all but models L-854 & P-854 which have brine tank						
Make of expansion valve	Detrol						
Type of ice trays	Aluminum with one rubber tray in all models except 454						
Condenser							
Make of condenser	Bush						
Method of cooling	Fan						
Type of condenser	Finned tube						
Policy							
Guarantee on cabinet	1 year						
Guarantee on system	1 year						
Are replacement parts furnished to independent service companies	No						

7 Models Included In Copeland Line

(Concluded from Page 1, Column 5)

age capacity is available in lacquer exterior finish only, but the models with 5.25, 6.41, and 7.42 cu. ft. net capacities are available in both lacquer and porcelain exterior finishes.

Hardware is of the modernistic, semi-concealed type on all but the smallest models. Hinges are torped-shaped, with the tips in black and the rest in chromium. Door latch and strike are of similar finish.

Cabinets are insulated with Balsam Wool, ranging in thickness from 2 in. for the smallest model to 4 in. for the largest.

Evaporators are the dry-expansion type, and are placed at the top, right-hand corner of the cabinet. The evaporators in models L-854 and P-854 have a brine tank to provide hold-over refrigeration. All but the smallest models have one Inland rubber ice cube tray. Cold controls for the new Copeland household models will be made by Penn Electric Switch Co. and are the latest approved type, meeting all the Underwriters' specifications. Expansion valves used on the Copeland models are made by Detroit Lubricator Co. Condensing units are suspended in a spring-and-rubber mounting.

Shelves in the household models will be made of pickled and annealed open hearth steel, approximately 16-gauge. The new "diamond-grid" design of the shelves (in porcelain models only) prevents small bottles and objects from falling through or catching in the openings, but the shelves have no greater metal area than the average shelf made of wire, thus permitting ready circulation of the air.

Compressors in the household line are the slow speed type, all models operating at 360 r.p.m. The household units are powered by ¾-hp. Delco capacitor type motors.

Cabinet shelves are mounted on rubber reinforced supports. The bottom shelf has been cut out in such a manner to provide ample space for the storage of tall bottles.

The food chamber on all models is made of one piece porcelain, with rounded corners. Electric lights are standard on all but model 454.

Key specifications and prices of the household refrigerators are:

Model No.	Gross Storage Capacity (cu. ft.)	Net Storage Capacity (cu. ft.)	List Price (F.o.b. Factory)
454	4.42	3.96	\$110.50
L-604	5.81	5.25	157.00
P-604	5.81	5.25	182.00
L-704	6.95	6.41	184.00
P-704	6.95	6.41	212.00
L-854	8.46	7.42	223.00
P-854	8.46	7.42	260.00

Artophone Places Big Copeland Order

MT. CLEMENS, Mich. — Herbert Schiele, vice president and R. C. Layer of the Artophone Corp., St. Louis Copeland distributor, visited the plant early in February to see for themselves what the new Copeland Refrigeration Corp. was doing.

Before leaving they plunked down an order calling for the immediate shipment of the initial production of Copeland 1934 household refrigerators—the value of the order being approximately \$17,000.

Greensboro Dealer to Handle G-E Line

GREENSBORO, N. C.—Morrison-Neese Furniture Co. of this city has been made a dealer in General Electric refrigerators by L. W. Driscoll, Inc., G-E distributor in Charlotte.

Westinghouse Home Has Load of 87 KW.

(Continued from Page 1, Column 1)

were in mass production, the house and all its built-in appliances could be erected for about \$12,000. This figure they hope to lower within the next few years.

While some 60 Westinghouse engineers from 20 departments contributed to erection of the house, the company's high officials give most credit for the work to V. G. Vaughn, manager of the appliance engineering division, who first conceived the idea of the home as it stands today, and Frank F. Forshee, designing engineer, who laid out plans for the kitchen and its equipment.

This Home of Tomorrow has a connected load of 87 kilowatts. It uses 1,500 kwh. monthly, and 18 kwh. annually. It has 108 electrical horsepower available for household duties—the equivalent of 864 servants.

Compare this with the average electrified home today, which has a connected load of three kilowatts, consumes 50 kilowatt-hours monthly, and 600 annually. It has eight electrical horsepower available for household work, which amounts to the performance of 64 servants.

Westinghouse Home of Tomorrow, in other words, consumes about 30 times the amount of kilowatt-hours used by the average home today. It has three and one-quarter miles of wire concealed behind its walls, and 19 built-in motors to do household work. It has 71 double convenience outlets, 16 single outlets, nine radio outlets, seven electric clocks, and 113 lighting outlets.

The house is a two-story brick veneer structure approximately 32 ft. wide, 39 ft. long, with a garage attached. On the flat deck roof is built a deck house measuring 12x18 ft. in size.

Insulated Construction

Walls of the home are constructed of four-inch face brick on the outside, one-inch air space, one thickness of building paper, a ½-inch thickness of Temlok, 3½ inches of studding space, another ½-inch of Temlok insulating board, and ½ inch of plaster. Roof is constructed of 1½-inch Temlok nailed to 10-inch joists and plastered over for the ceiling. Above the joists is ½-inch Temlok, the composition, and painted canvas.

There is every type of electrical and mechanical convenience imaginable in the Home of Tomorrow, but engineers look upon the air-conditioning system as one of the most interesting features.

The system furnishes heating and humidification in winter, cooling and dehumidification in summer, and air-cleaning and circulation.

A steam boiler with associated heat exchanger is installed instead of a warm air furnace so that an experimental steam jet cooling system can be used later. During the first season, a two-ton electric refrigeration unit will supply cooling.

105,000 B.t.u. Heating Load

Based on 0° F. outside temperature and 70° F. inside temperature, the estimated requirements for heating the entire house are approximately 105,000 B.t.u.'s per hour.

The total cooling capacity required for the entire house is estimated at 53,000 B.t.u.'s per hour for 15° cooling. Use of one-inch insulation and two-inch insulation in the roof, and double window glass accounts for the cooling load being smaller than usual for a house of this size (24,200 cu. ft.).

Installed refrigeration equipment will remove only 24,000 B.t.u.'s per hour, and will cool only a part of the house at a time. The system is so designed that the cooling effect can be transferred from the living room and dining room to the three bedrooms at will, to furnish complete cooling for either of these two groups of rooms.

The control is also arranged so that the entire house can be cooled as much as is possible with the limited refrigerating capacity available. Westinghouse men estimate that the smaller cooling system is about 50 per cent cheaper than would be one large enough to cool all parts of the house simultaneously, besides being considerably more inexpensive to operate.

For full-capacity cooling in this particular residence, a 6- or 7½-hp. motor would have been required instead of a 2½-hp. unit, and would cause difficulties in voltage regulation, besides necessitating heavier wiring and transformer capacity than is required by the smaller motor.

The entire duct system for distributing conditioned air is divided into three sections. One supply-and-return section supplies air to the living room and dining room. A second section supplies air to the three bedrooms, while a third includes ducts for the rest of the house.

Return ducts are installed in all the rooms which may be completely cooled—the living room, bedrooms, and dining room. The other return ducts are run from the halls, and carry air from the rest of the house.

The three duct sections come to-

gether at a common point in the basement, where all air is passed through the air-conditioning unit. Six electrically operated dampers are used to open and close the three supply and three return ducts as required.

A steam boiler, with a rotary wall flame oil burner, furnishes steam to the heat exchanger of the air-conditioning unit. The oil burner control has a pressure regulator to maintain a constant steam pressure in the boiler.

Supply of steam to the heating coils is controlled by a steam regulating valve with two control valves. One is located in the air stream leaving the air-conditioning unit. The other is at the entrance of the duct provided for bringing in outside air.

The two steam control bulbs are adjusted so that as outside temperature decreases, the temperature in the air leaving the air conditioner is increased by admission of more steam to the heating coils.

The fan motor will operate at a

high and low speed during the heating season. It operates continuously during the winter months. When the heating thermostat in the hall demands heat, its contact closes, causing the fan to operate at high speed and force a large volume of warm air through the house until the temperature has risen sufficiently to open the thermostat contacts. The fan then operates at low speed again.

The humidifying equipment consists of six water injectors which direct streams of water against targets. The equipment is controlled by a magnet valve and humidistat. Air is first blown through the sprays to collect atomized water, then against steam coils, where the water is vaporized before it is carried to the rooms of the house.

A glass wool filter is used for cleaning the air, and may be removed when it has accumulated a sufficient amount of dirt to reduce its efficiency materially.

For automatic control of the house

temperature, three thermostats are used, two for cooling regulation and one for heating. One of the cooling thermostats is located in the living room and the other in the main bedroom. All three thermostats have remote control bulbs located in the recirculated-air ducts.

By this arrangement, the temperature of the air in the recirculated-air ducts actually controls the opening and closing of the thermostat contacts, but any desired adjustment of the thermostat settings can be made easily at the locations mentioned.

For control of the air-conditioning system, a small control switch with a position indicating dial is located in the basement. For heating, this switch is turned to the heating position. The electrically operated dampers then open the supply and return ducts in all part of the house. The oil burner starts automatically, and the heating process is under way.

For cooling a part of the house in the summertime, the control switch

is turned to the second position. This shuts down the heating equipment and places the cooling equipment under control of one of the two cooling control stations upstairs.

A two-position selector switch is located in the hall, and the position of this switch determines whether the cooling equipment is to cool the living room and dining room, or the three bedrooms.

If the selector switch is in the living room position, for example, the electrically operated dampers shut off all air to the other rooms in the house, and supply air to the living and dining room.

Fan of the air-conditioning system and the compressor motor of the condensing unit are controlled by switches located near the living room thermostat, which starts and stops the compressor. The control is arranged so that the fan can be used without refrigeration to give air circulation only, if desired.

(Continued on Page 15, Column 1)



MORE THAN A MILLION SOLD *Last Year!*

CONVENIENCE is the biggest thing any automatic refrigerator has to offer. • Flexible Rubber Ice Trays are the greatest

CONVENIENCE any automatic refrigerator can have. • That's why more than a million Flexible Rubber Trays and Grids

were sold last year alone. • That's why sales of Flexible Rubber Trays and Grids have increased 317% in four years. • People

WANT these modern conveniences—expect to GET them—in modern refrigerators.

• And THAT'S why all the leading refrigerator manufacturers have equipped their

new models with Flexible Rubber Freezing Trays and Grids. And approximately

90% of the mechanical refrigerators produced in 1934 will be equipped with this

modern ice cube convenience.

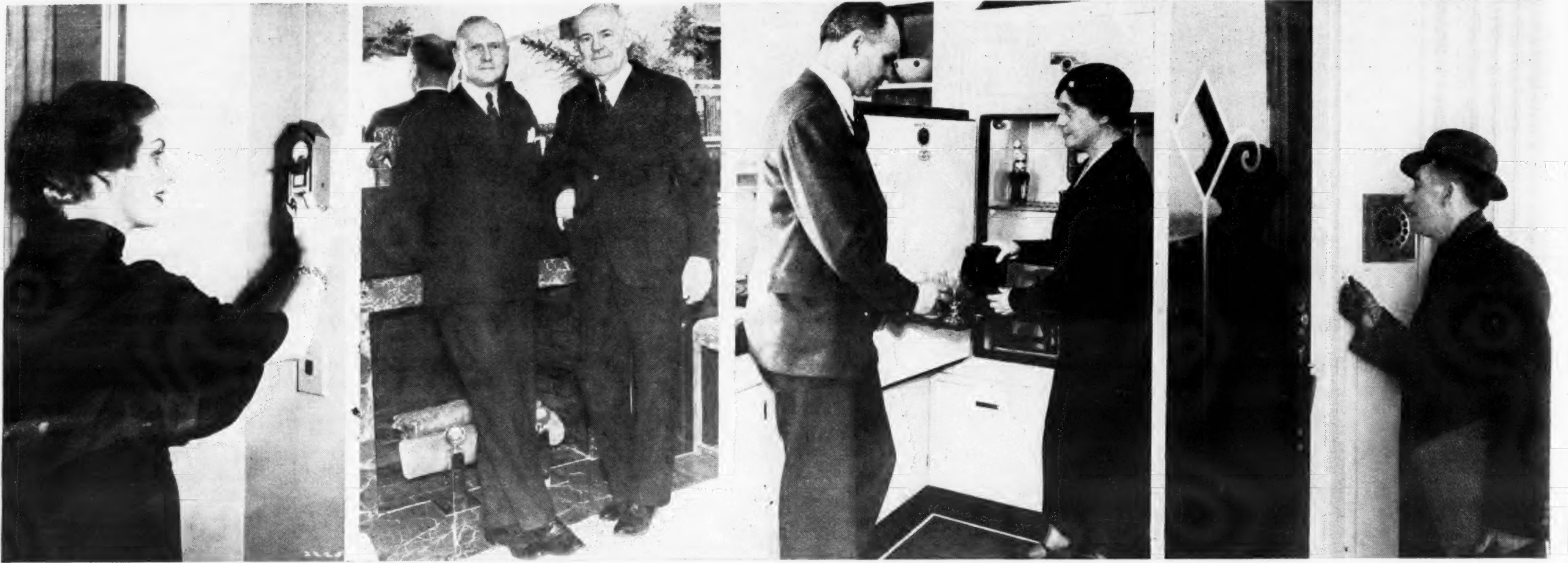
INSIST

that every model of the refrigerator you sell comes equipped with Flexible Rubber Trays or Grids. The Inland Manufacturing Company, Dayton, Ohio.

Flexible Rubber Trays & Grids

ICE CUBES THE MODERN WAY

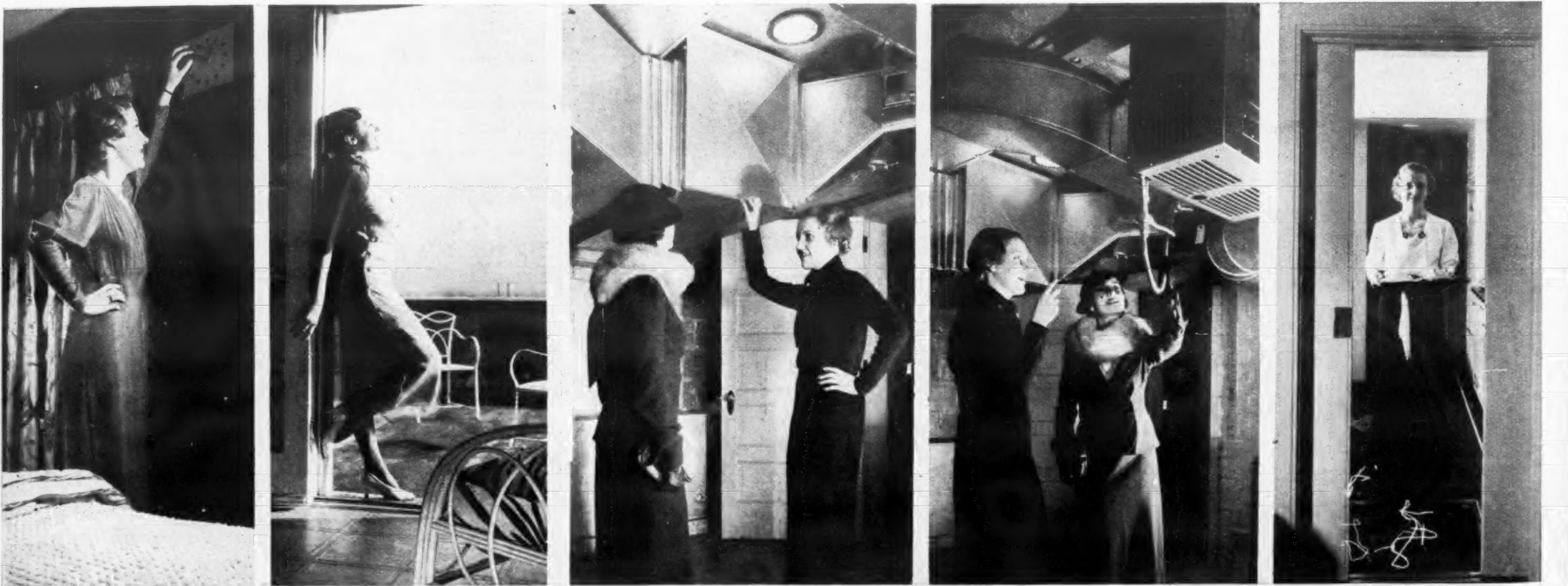
Electricity Does the Work of 864 Servants in 'Home of Tomorrow'



(1) As the housewife turns a knob on this instrument, an indicator instantly registers the air temperature in several of the home's principal rooms. (2) A. E. Allen (left), Westinghouse vice president in charge of merchandising, and Ohio's Governor George White are photographed in the living room after dedication of the Home of Tomorrow. (3) Miss Katherine Fisher, director of Good Housekeeping Institute, pours a cool drink for V. G. Vaughn, manager of appliance engineering, who supervised construction of the electrical home. (4) Gil Baird, editor of Cold Selling Talk, shows how a good salesman introduces himself through the "doorman" of the house.



(1) No needless steps in this laundry, which has its own radio, telephone, and "doorman." This view shows the clothes chute emptying onto the continuous work table. (2) When filled with foods for every course of a meal, this electrically heated service wagon makes unnecessary any trips from the dining room to the kitchen during dinner. (3) A cabinet above the built-in electric range holds all utensils necessary for cooking. (4) A view of the kitchen. At the back is the electrical service cart in its alcove under the work table.



(1) Built-in electric clocks in colors matching each room are installed throughout the house. (2) Looking out over Mansfield from the door of the penthouse on the second-story roof. (3) A part of the duct system in the "weather room," for carrying conditioned air to all parts of the house. (4) Mildred Kelly (left) shows her friend the evaporator of the reverse-cycle refrigeration system which supplies hot water in the Home of Tomorrow. (5) As one enters the dining room from the service pantry the door between the two rooms opens and closes automatically.

3 Refrigerators In Westinghouse Home

(Continued from Page 13, Column 5)

If the housewife wants to cool the entire house, as much as the limited capacity of the refrigerating equipment will permit, the control switch in the basement is thrown to the third position. All the ducts are then automatically opened, and the fan and refrigerating unit may be controlled from either the bedroom or living room.

When the entire house is being cooled, the fan operates at a higher speed than when only a part of the house is being cooled.

Reverse refrigeration provides hot water for the Home of Tomorrow. Water from the storage tank is circulated through the two ½-hp. compressors and there picks up heat during the process of changing the gas to a liquid.

Most of the heat used to raise the water temperature about 140 degrees is extracted from the atmosphere of the room. The evaporator is located above the oil burner and boiler in the "weather room," and the compressors act as heat pumps to transfer heat from the atmosphere to the water.

Efficiency of Heat Pump

Westinghouse engineers say that by utilizing all of the heat losses of the motor and compressor, in addition to other processes, a heating unit, with an efficiency of approximately 170 per cent, has been developed.

A thermal switch mounted on the storage tank maintains the water between 140 and 150 degrees. Under ordinary conditions, it is possible to draw from 25 to 30 gals. of water from the storage tank without reducing the water temperature below the level set by the thermostat.

There are three household refrigerators in the home. A legless 3-cu. ft. model in the basement sound-proof recreation room provides a bit of storage space for sandwiches and a few bottles, and keeps a couple of trays of cubes ready for use.

Up on the first floor are two more refrigerators, both of them Westinghouse models, with legs removed, built into the walls and painted to match the rest of the kitchen. One is a 7-cu. ft. model in the kitchen proper, while the other is a 5-cu. ft. model in the cold cookery section of the cuisine.

Ice Cream Freezer

Ready for installation in the evaporator of the latter refrigerator is a motor-driven container which can be connected to an outlet within the cabinet, or by means of a tape-type lead out through the door opening.

The motor, mounted in the head of the container and controlled thermostatically, runs intermittently, and the sum of the intervals of operation over a period of time will be equivalent to about 1/30 to 1/50 of the total time.

No switch is required because the thermostatic control is so arranged that it must be below the freezing point before the motor is cut into circuit.

In the kitchen, built in the wall, is a device, the Defrost-O-Clock, which combines the functions of an automatic defroster for the electric refrigerator and an electric clock.

Automatic Defrosting

It prevents frost formation on the evaporator of the refrigerator by defrosting it each day, without attention other than setting the hands when it is installed. It is designed to defrost the unit during the early morning hours, when the process will not inconvenience the housewife. The clock consumes less than one watt.

Illumination in the Home of Tomorrow is drawing as many oh's and ah's from the visitors as any other single feature of the place, for it has been planned not only to prevent eye strain, but to make the house a thing of beauty. Shadows don't exist in it.

As one approaches the residence at night, he sees its exterior flooded with light from outdoor waterproof projectors located at intervals near the walls. And perfectly outlined in golden light is the main entrance, over which is the house number in silhouette.

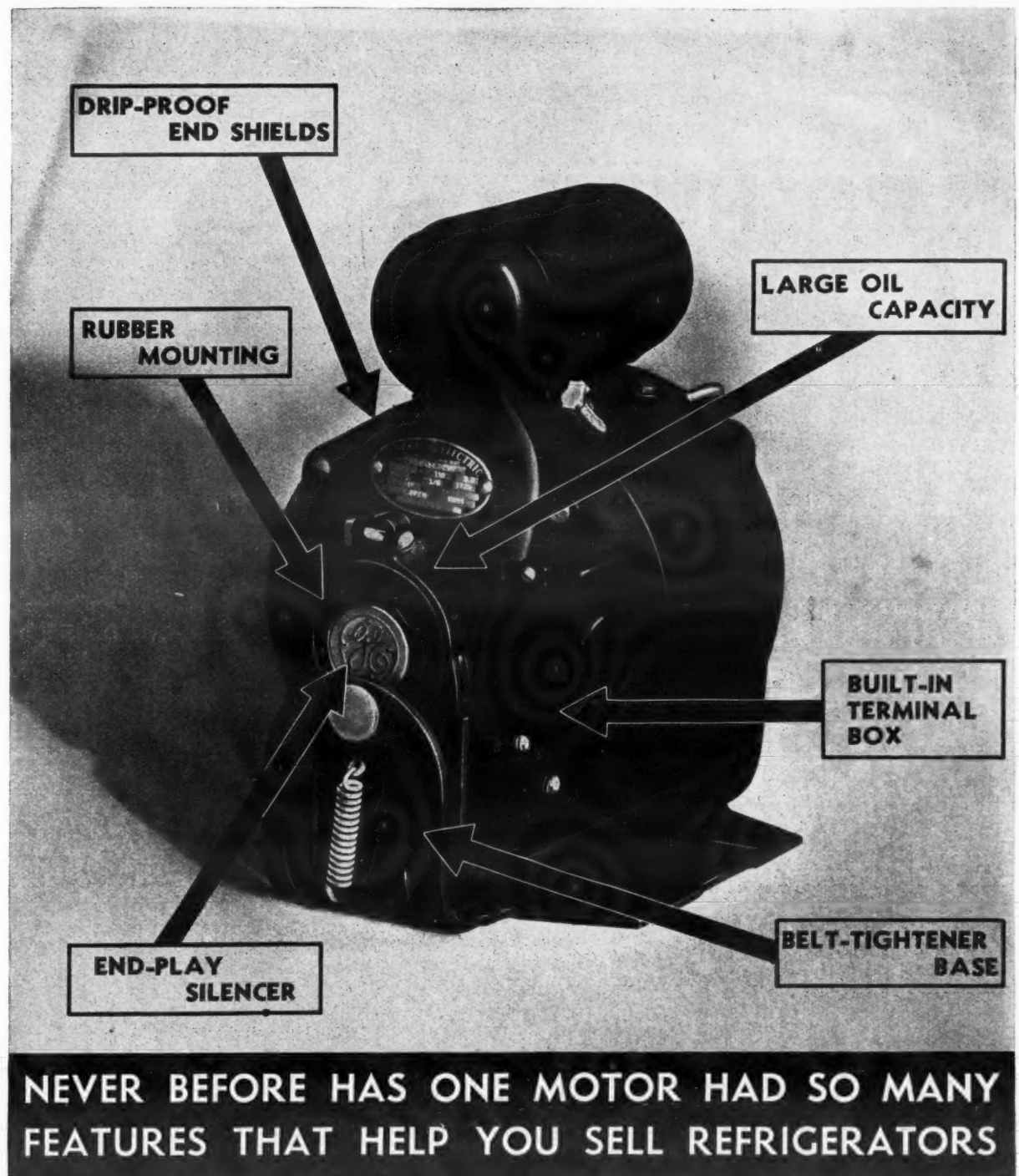
Inside, the little entrance hall is lighted by lamps behind an etched glass panel sunk into the ceiling. And there is a large mirror in the hallway, with lights on both sides and above it.

When a switch at the doorway of the living room is snapped, all parts of that room are flooded with a mellow light suitable for "conversational sitting." The light comes from coves behind the molding at both ends of the room. There are no chandeliers here, or in any other part of the house.

Drawn up into the ceiling of the dining room in a semi-flush fixture, covered by a large sheet of patterned and frosted glass, are the lights for that room—or most of the lights. Behind the glass is a bank of blue lights, a bank of amber lights, and two banks of white lights. Combinations of these three may be used to

(Concluded on Page 16, Column 1)

See the 1934 Care-free CAPACITOR-MOTOR Before you buy



RUBBER MOUNTING . . . The 1934 "care-free" motor gives you smooth, cushioned power, with new quietness. It runs in a mounting of springy, live rubber (treated with a compound which makes it impervious to oil). It combines excellent sound-isolating qualities with good shaft alignment and excellent flexibility. It is designed to eliminate objectionable noise caused by torque vibration and by endwise and radial out-of-balance.

END-PLAY SILENCER . . . Consisting of a durable spring-steel plate built in as an integral part of each end shield, this device eliminates end-play noise by cushioning oscillations of the rotor in either direction longitudinal to the shaft — another reason why the "care-free" motor is quieter.

BELT TIGHTENER (optional) . . . This new, radically different belt tightener depends on torque and not on springs for its action. It maintains just sufficient tension to prevent slippage, because the tension is proportional to the load. It eliminates service calls for belt tightening or premature replacing. Consider the saving in service costs alone.

CAST-ALUMINUM ROTOR . . . The squirrel-cage rotor winding is a one-piece, solid aluminum casting, formed by a unique

high-pressure method. This assures a uniform, well-balanced rotor with permanent magnetic characteristics.

LARGE OIL CAPACITY . . . Large, improved, wool-packed bearings, with oil throwers and returns which conserve the lubricant and assure a constant supply of fresh, clean oil. Lubrication is required only once a year.

BUILT-IN TERMINAL BOX . . . Lowers assembly costs by eliminating all necessity for splicing and soldering leads. Three binding posts are provided for direct connection of the line and cold-control leads.

DRIP-PROOF END SHIELDS . . . These protect the motor from falling dirt or water and give the "care-free" motor a modern, streamline appearance.

Don't fail to see the CARE-FREE CAPACITOR-MOTOR before you buy. Everything about it spells lower service costs and greater customer satisfaction.

Also, to insure unit responsibility for the electric equipment on your refrigerator, order G-E cold-control units, and cable, with the motor. For complete information, address General Electric, Dept. 6A-201, Schenectady, N. Y.

GENERAL ELECTRIC

Electric Appliances Of All Types Used

(Concluded from Page 15, Column 1)
produce any effect the hostess desires—perhaps a shade to match her gown, perhaps to complement her dinner ware, perhaps to suit her dinner-time mood.

To outline the four corners of the room, each has a small ornamental bracket 18 inches from the ceiling using a 25-watt flame-tinted lamp behind a flashed panel. And at the snap of a switch, the room's three windows are flooded with light which shuts out the night with rays of what is not unlike sunshine.

In the convenience pantry, breakfast nook, and kitchen are modern type enclosing units consisting of die-cast chromium-plated hangers and monax globes, besides lights in all cupboards and over working shelves and boards.

Upstairs are two bedrooms which have mirrors and dressing tables lighted at sides and top from lamps concealed by mirror strips. Light in the third bedroom, or babies' room, comes from a flush-type unit using a 25-watt lamp behind an opal panel 12 inches above the floor. There is also an ultra-violet lamp here, and a portable floor lamp.

The reading room, coziest nook in the whole house, has its book shelves lighted by flush-type units using 25-watt lamps on seven-inch spacings behind opal panels. Only the binding edges of the books are illuminated.

Stairways are all lighted, and the penthouse has flush-type lighting panels in the ceiling and the four corners of the room. There are occasional lamps aplenty in all parts of the house.

Feature of the house is the burglar light system. A 25-watt intermediate base lamp in a small flush-type unit eight inches from the floor is located in every room of the house. A switch in the master bedroom controls all these lights.

Another switch in each bedroom controls just enough of these lights to facilitate movement in the bedrooms, halls, and bathrooms adjacent. A part of the flat, first-story roof just outside the reading room is lighted, as is the roof outside the penthouse.

General plan of the home's laundry room is such that work there is both simplified and systematized. On three sides of the room are work tables which connect the various pieces of equipment, all built-in, used in washing, ironing, and drying clothes. The layout enables the work to pass from one operation to the other in one direction on the same level.

The clothes chute from all floors

empties onto a large sorting table 36 inches high. At the end of this table is an electric sterilizer, or wash boiler, a part of which is an electric heater for starch making.

At the left, and adjoining the sterilizer, is the washing machine, a unit of clover-leaf design made of Monel metal and porcelain enamel.

Comprising it are three large tubs, each with a motor-driven agitator, and in the center of the three tubs is a spinner-type wringer. One of the tubs is for washing, two for rinsing. All of the tubs, as well as the wringer, are connected with the drain, and each tub is supplied with hot and cold soft water.

As the clothes are taken out of the wringer from the last rinsing water, they are placed on a portable metal table which moves on ball bearing casters to the drying oven. Next to the washer is a small Monel sink for hand washing silk lingerie. At the sink is an arrangement of supplies and implements for tinting, stain removing, and cleaning.

Clothes-Drying Ovens

The two clothes-drying ovens are electrically heated, ventilated by clean fresh air, and automatically controlled for cutting off the heat when the clothes are dry. As the clothes are taken from the dryer, they are folded and sprinkled on a work table at the right of the dryer, within easy reach of the ironing machine.

This machine, which is also electrically heated and has an automatic temperature control, unfolds out of the work table into a position convenient for operation from a sitting posture. It may be hand- or foot-operated. On both sides of the ironer are racks which swing out from under the work table into position for holding the finished work.

For hand pressing, there is a large ironing board which swings out from under the work table, near the laundry chute. On the front of the board is an apron which drops out and catches the garment as it slides over the board, keeping it from touching the floor.

At the end of the board is a small cabinet containing a permanently connected electric iron with automatic temperature control which is turned on and off by the opening and closing of the cabinet door. Cord is kept out of the way by a counterbalanced arm above the board.

In the kitchen, which has two outside walls, is a continuous work table extending around three sides of the room. At the entrance to the kitchen, near the rear wall, is a cabinet in which towels may be dried by circulation of clean fresh air. This dryer is about midway between the dishwashing sink in the kitchen and the

silver and glassware sink in the service pantry.

Next to the dryer is the larger of the two electric refrigerators already mentioned. To the left, then, is a built-in cabinet which opens out onto the work table and conveys incoming food supplies from the outside service door.

A bottle and can dispensary is provided by a trap door in the work table for disposing of empty cans to a container outside. A bit to the left is a garbage accumulator, built into the work table. This has a basket which holds the refuse and allows it to drain into another basket which may be flushed with clean hot water to wash particles and liquid refuse into the sewer.

Dish-Washing Apparatus

Next comes the dish-washing apparatus which consists of a Monel metal sink, drainboard, and automatic electric dishwasher. The dishes are washed in hot suds, drained, rinsed with hot water, and dried by air as the machine automatically opens.

To the left and around the end of the kitchen is more work table space, and a permanently installed food mixer with its bowls and attachments stored in a small swinging cabinet. There is also an electric meat grinder and slicer.

On the side opposite the sink is an electric range with four heating elements and a stainless steel top. Above are an electric plate warmer and a cabinet containing cooking utensils. The electric oven of the range is automatically controlled for both time and temperature and brightly lighted when the door is opened.

Below the oven is an electrically heated broiler which broils food without there being any necessity for turning them. A metal hood over the range carries off all cooking odors. Even the odor of burning bacon does not penetrate other parts of the house.

Heated Service Cabinet

A part of the kitchen equipment is an electrically heated service cart. It is a folding cabinet on rubber wheels, made of inlaid Micarta. It is divided into three compartments, front, back, and top.

The front space is filled with wire racks for storage of plates to be used in serving at the dining room table. In the top compartment is a large metal tray upon which are placed dishes filled with food. An entire dinner can be loaded into the cart at the kitchen range and moved into the dining room, where it is kept warm by electricity from a nearby convenience outlet.

As soiled dishes are taken from the table after each course, they are placed in the compartment in the back of the cart, and the next course is served. After the meal, the car is taken to the kitchen, the dishes unloaded into the dishwasher, and the cart stored under the work table in a space provided for it.

To the right of the electric range is the home's service pantry, which connects the kitchen and the dining room. Nearest the kitchen is a smaller refrigerator for storing beverages, desserts, and salad-making supplies.

Near this refrigerator is the telephone and inter-communicating system which connects all floors and both entrance doors. There is a work table the full length of this room, with lighted cabinets above and below for glassware and such articles as are used in cold cookery.

On the work table is a permanently located bread cabinet with cutting board and knife attached, and built-in juice extractor. There is also a Monel

metal sink for washing glassware and silver.

Just a step off the service pantry, is the breakfast room which has a built-in electric toaster, and a permanently located coffee maker connected with the water system and the drain. It makes from three cups to a gallon of coffee automatically. There is also an electric sandwich toaster, waffle iron, and pancake griddle.

As a person enters the dining room from the service pantry, or the service pantry from the dining room, he passes through double sliding doors that part automatically as he approaches them, and close after he has passed through.

Seven Radio Sets

Seven radio sets have been installed in the home, one an all-wave receiver. Another radio set in the car purchased to go with the home opens the garage doors as the owner comes within a block of the house, and closes the doors when the car is in the garage. There is a telephone outlet in every room of the house.

Fuses have been eliminated. Instead, there are No-Fuze load centers upstairs and down which restore electric service when their switches are operated.

Upstairs, two of the most interesting rooms are the baths. Both are finished in Micarta, one in shiny black, the other in a green and yellow combination with a mural effect produced by inlaid aluminum strips.

In each, the mirror is illuminated brilliantly. Water runs out of the bathtubs at the opposite end from which it enters, thus, say Westinghouse men, eliminating the usual ring.

The guest bath has an electric towel dryer which also provides additional heat for the room. Above the shower in the same bath is an infrared lamp to provide warmth from the invisible rays of its "black light." Tubs have hand rails, and the floor is of cork which does not feel cool or slippery.

On Feb. 20, a dozen trade publication men previewed the Home of Tomorrow, and on the day following, it was dedicated by Ohio's Governor George White. Guest at the dedication ceremony was Miss Katherine Fisher, director of Good Housekeeping Institute.

Distributor Uses Trailer To Contact Dealers

NEW YORK CITY — Wholesale Radio Equipment, Inc., metropolitan distributor of Stewart-Warner refrigerators, is using a trailer to contact their refrigeration dealer accounts and prospects.

The trailer will be used over a six weeks period. Use of the trailer permits the distributor to take samples right to the dealer's door. Dealers are notified in advance of the time that the trailer will be at their store, so that an effective display and sales presentation can be arranged.

Elusive Ice Gives Lead To Frigidaire Sale

ELYRIA, Ohio — E. F. Cheetham, Frigidaire salesman for the Ohio Public Service electric shop here, saw a cake of ice fall from the rear of an automobile. He called to the driver, assisted him in recovering the ice. Then he handed him a Frigidaire pamphlet. Two days later the driver walked into the Ohio Public Service showroom, bought a Frigidaire.

IF IT'S RUBBER-

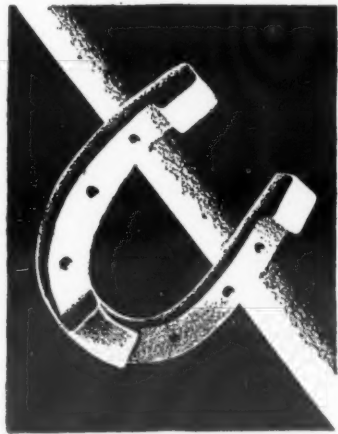
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Because of Century's 30 years' experience in building motors right—because of Century's strict adherence to high standards—because of Century's ability to recommend the right application of the right motor... resale manufacturers and users on Century ledgers always have "good luck" with their motors.

Sizes range from 1/250th to 600 horse power, depending on type.

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WANTS TO HEAR FROM EVERY RESPONSIBLE INDEPENDENT DEALER

Who Wants to Make More Money in '34!

DIRECT-FACTORY SALES PLAN

—here is the thing you have always wanted—DIRECT CONTACT AND DEALING with a RESPONSIBLE and AGGRESSIVE MANUFACTURER. Under this basis you work on the COMPLETE DISCOUNT—handle your own installation, service, and financing—and will be in a position to enjoy the cream of your own efforts! "M & E" line, policy, standing, and past success will put you in a position to make real profits this year.

Complete, magnificent household line (cabinets by Seeger), as well as one of the strongest commercial quality lines on the market.

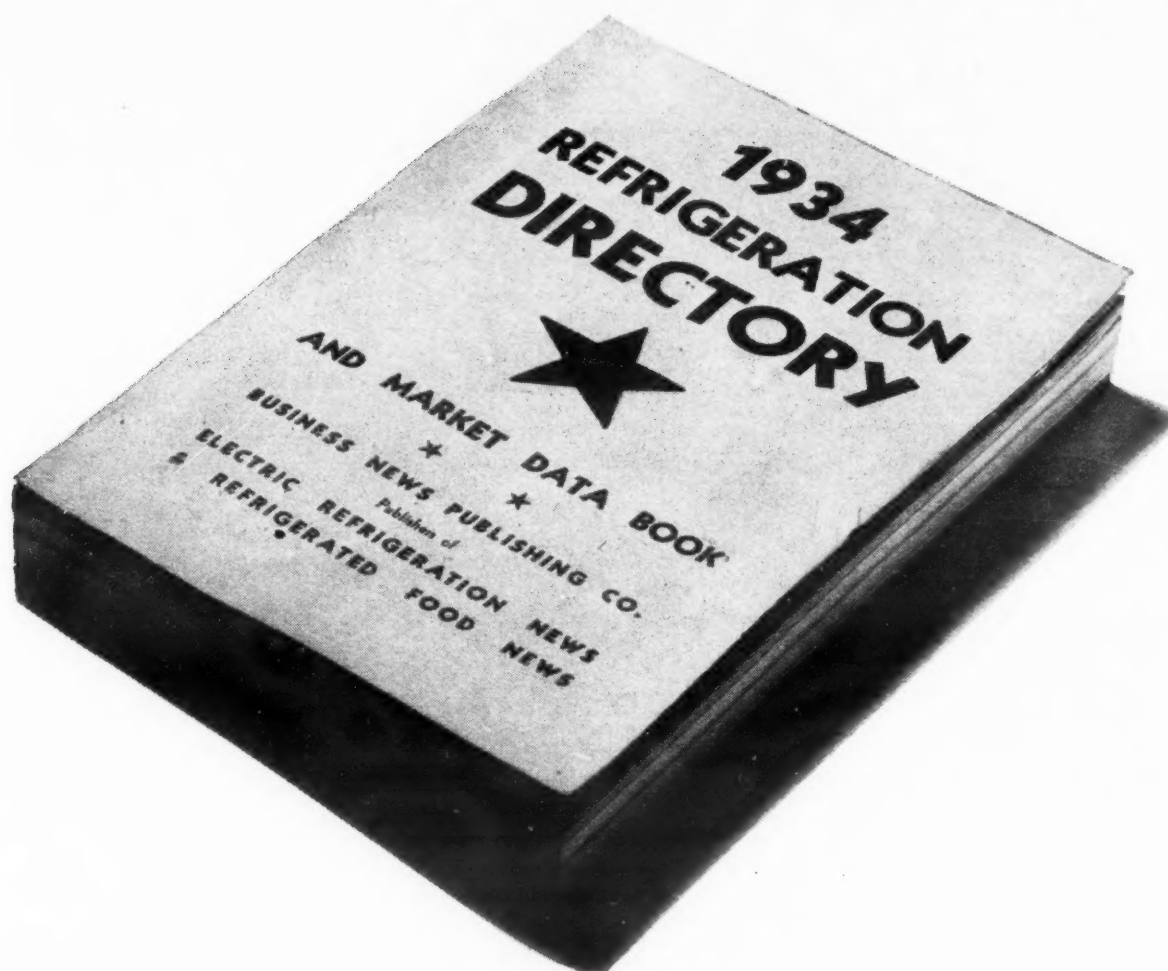
8th Year in Refrigeration

WRITE—WIRE—PHONE for Details



MERCHANT & EVANS CO., Manufacturers
PHILADELPHIA, PA. Est. 1866 LANCASTER, PA.

Men of the industry are constantly asking us for this information



This big new book full of useful information on the refrigeration business will supply all available answers to your questions about the market and the sources of supply

THAT there is a growing demand for more facts on all phases of the refrigeration business is evidenced by the hundreds of letters we receive every year asking for specific information about the industry and its markets.

Distributors and dealers ask us—

Who manufactures reliable air-conditioning equipment?

What are the prospects for commercial refrigeration sales in the future?

Can you furnish the specifications on all leading makes of household refrigerators?

Where can I buy refrigerators made to order in special sizes?

How many outside salesmen does the average dealer employ and on what basis are they paid?

Do most dealers do their own servicing?

Who supplies a financing service for refrigerator sales by a dealer?

Is it advisable for dealers to sell more than one make of refrigerator?

What refrigerator sizes sold best last year in various parts of the country?

How many electric refrigerators are now in use in the following districts?

Do other dealers find it profitable to sell companion merchandise?

Where can I get glass or porcelain dishes to fit into a refrigerator?

Who makes milk coolers for farm use?

Independent service companies ask us—

Where can I buy refrigerants in small size drums?

Who makes the tools needed for installation and service work?

Where can I buy expansion valves of the type used on the make?

Who makes evaporators suitable for a meat market cooler?

Manufacturers ask us—

How many household and commercial refrigerators were sold last year and in previous years?

What success are other companies having with water cooler sales?

How many manufacturers operate their own retail stores?

What type of dealer is selling the most refrigerators?

How can we determine proper sales quotas for dealers?

How many refrigerators were sold in New England in the last five years?

How many refrigerator dealers are there in the United States?

How are refrigerator sales distributed by months?

How many refrigerators were sold last year in the New York metropolitan area?

How many refrigerators are now in use in each state?

What percentage of total sales were made by department stores?

The 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK will soon be off the press. This new big book will contain all available information to date on all commercial phases of the refrigeration business. Sales figures, specifications, facts on the distribution structure, the size of the market, etc. will be included in the statistical section. All manufacturers' names will be listed in the Alphabetical, Trade Name, Classified Products, and Geographical sections of the DIRECTORY. Independent service companies, frozen food producers, associations, and other lists will be given.

All this information will be correlated and indexed in one volume for quick and ready reference.

You will need this information in 1934. Order the DIRECTORY now so that you will have it when needed. The price is only \$3.00.

You can save money now by buying the DIRECTORY in combination with a new or renewal subscription to ELECTRIC REFRIGERATION NEWS at the combination rate of only \$5.00.

BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.

PATENTS

Issued Feb. 6, 1934

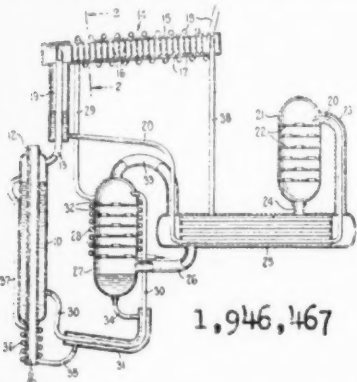
1,946,464. REFRIGERATING APPARATUS. John Ralph Fehr, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a corporation of Delaware. Application Nov. 20, 1930. Serial No. 496,903. Renewed June 8, 1933. 18 Claims. (Cl. 62-4.)

1. Refrigerating apparatus including a refrigerator cabinet, a refrigerating system including a refrigerating element positioned within the cabinet, control means for the refrigerating system including automatic defrosting means for providing defrosting periods of the refrigerating element, and signaling means for indicating in advance the advent of a defrosting period.

Issued Feb. 13, 1934

1,946,467. CONDENSER FOR REFRIGERATING APPARATUS. Harry K. Bergholm and Hugo M. Ullstrand, Evansville, Ind., assignors to Electrolux Servel Corp., New York, N. Y., a corporation of Delaware. Application March 14, 1932. Serial No. 598,604. 10 Claims. (Cl. 257-28.)

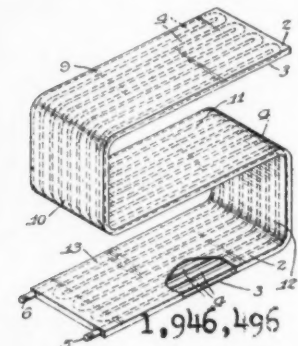
1. A condenser comprising a substantially horizontally disposed tube closed at each end, a gas inlet and liquid outlet



1,946,467

at one end thereof, cooling means on the outside of said tube, and means within said tube to direct the gas in a path of flow adjacent the wall thereof and allow the reverse flow of liquid along the bottom thereof.

1,946,496. REFRIGERATING APPARATUS. Herman W. Kleist, Chicago, Ill., assignor to Dole Refrigerating and Ma-



1,946,496

chine Co., Chicago, Ill., a corporation of Illinois. Application Dec. 20, 1930. Serial

No. 503,664. 7 Claims. (Cl. 62-99.)

5. A refrigerating apparatus comprising a food receiving receptacle provided with heat insulating walls, a refrigerating element within said receptacle and extending across the top and the bottom thereof and between which the food is received, said refrigerating element comprising two separated metal plates, a coiled pipe between them and through which the refrigerating material is circulated.

1,946,532. RACK FOR REFRIGERATORS, OVENS, AND THE LIKE. Charles T. Hatch, Albion, Mich., assignor to Union Steel Products Co., Albion, Mich. Application Jan. 11, 1932. Serial No. 585,817. 2 Claims. (Cl. 211-143.)

1. The combination with supporting rails provided with bearing members at the front ends thereof, and a shelf comprising a border frame, the side members of which are slidably supported on said bearing members and have inwardly projecting loop-like offsets adjacent their rear ends, the right portions of the offsets being inclined rearwardly and downwardly so that the front arms of the offsets ride upon the rails and the rear arms thereof extend below the rails, said side members also having downward offsets extending from the front arms of said lateral offsets and disposed at the outer sides of the rails and constituting stops coacting with stops at the front ends of the rails.

1,946,550. PROCESS OF REFRIGERATING AND SEPARATING GASEOUS PRODUCTS. Lon S. Gregory, Tulsa, Okla. Application Sept. 4, 1931. Serial No. 561,296. 2 Claims. (Cl. 62-123.)

1. The process of refrigerating and separating gaseous products including initially compressing the gas, separating liquid and gaseous products of said initial compression, compressing the gaseous product of said separation, uniting the liquid products of initial separation and secondary compression, rectifying said united products, condensing and separating light ends of said united products, returning condensate of said light ends as reflux to the united liquid products, expanding light ends of the last named separation, cooling the light ends of the united products with the product of said expansion and drawing off condensate of the united products.

1,946,593. REFRIGERATOR. John M. Schilling and Willard G. Schilling, Lima, Ohio. Application May 6, 1931. Serial No. 535,402. 9 Claims. (Cl. 220-9.)

9. In a refrigerator construction, the combination of a rectangular box portion having a lower supporting frame of metal provided with first flanges extending inwardly and second flanges extending downwardly, metal legs having their upper ends inside of said second flanges and butting against the lower surfaces of said first flanges, and removable fastening devices securing said legs to said frame, whereby the parts may be assembled and disassembled.

1,946,691. BEER COOLING AND DISPENSING APPARATUS. Herman H. Harr, Newark, N. J., assignor, by mesne assignments, to Jack Cowan, Newark, N. J. Application April 17, 1933. Serial No. 666,396. 2 Claims. (Cl. 225-1.)

1. In apparatus of the character described, the combination with a liquid supply container, of a dispensing chamber having a draught faucet, means for forcing liquid under gas pressure from said supply chamber to said dispensing chamber and for maintaining pressure in said dispensing chamber, said dispensing chamber having a vertical vent opening, and a valve for closing said opening including a stem slidable in said opening and having a longitudinal passage communicating at its outer end with the at-

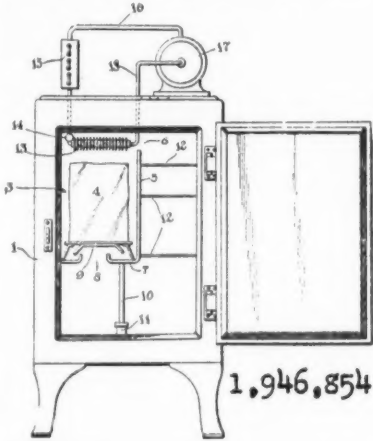
mosphere and a lateral port communicating with the inner end of said passage, a valve seat at the inner end of said opening within said chamber, a valve head on said stem inwardly of said lateral port and within said chamber having a face to engage said seat, means for limiting movements of said stem into said chamber whereby air within the chamber may escape through said lateral port and said longitudinal passage, a float directly connected to said stem inwardly of said valve head to force said valve head against said seat when the level of liquid in said chamber reaches a predetermined point, said valve having such weight and surfaces subject to pressure in said chamber that after said valve head has been moved against said seat by action of the float, said valve will be so held until the pressure in the chamber is reduced below a predetermined point.

1,946,788. DAMPER CONTROL FOR WALL REGISTERS OR GRILLES. John A. Germonprez, Detroit, Mich., assignor to Uni-Flo Grille Corp., Detroit, Mich., a corporation of Michigan. Application July 25, 1932. Serial No. 624,381. 6 Claims. (Cl. 98-106.)

1. In a grille having a damper associated therewith yieldably urged to open position, a pull member therefor flexible in character and having spaced portions thereof of greater size than intervening portions, a supporting element for said member provided in the grille including a rotatable tubular element, said element having a slot in its wall at the open end thereof through which the pull member extends of a width to receive a portion thereof of smaller size and to prevent movement therethrough of a portion of the larger size providing a means for adjusting the extent of opening of the damper.

1,946,854. METHOD AND APPARATUS OF REFRIGERATION. Robert K. Horner, Flint, Mich. Application Jan. 4, 1933. Serial No. 650,158. 4 Claims. (Cl. 62-116.)

1. In a refrigerator, the combination of a heat insulated casing; means for supporting ice within said casing and for di-



1,946,854

recting either a thermosiphon or forced air circulation through said refrigerator and in contact with said ice; a mechanical heat absorbing unit also mounted in said refrigerator in the path of such circulation; and constantly operating means for withdrawing heat from said heat absorbing unit and serving to maintain the same at a substantially uniform temperature approximating but above the freezing temperature of water.

1,946,918. HYDROGENATION OF CO TO METHYL FORMATE AND METHANOL IN LIQUID PHASE WITH ALCOHOL LIAGATE CATALYSTS. Norman D. Scott, Niagara Falls, N. Y., assignor to E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., a corporation of Delaware. No drawing. Application May 13, 1932. Serial No. 611,237. 12 Claims. (Cl. 260-106.)

1. Method of hydrogenation of CO which comprises absorbing carbon monoxide and hydrogen in an alcohol solution containing a plurality of alcohols, one of said alcohols being that of an alkali-forming metal.

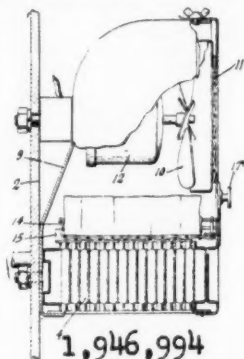
1,946,962. COOLING AND CARBONATING ATTACHMENT FOR RECEPTACLES. Fred A. Block, Detroit, Mich. Application June 21, 1933. Serial No. 676,967. 4 Claims. (Cl. 225-18.)

1. An attachment of the character described comprising, in combination, a tubular refrigerant receptacle which is closed except at its upper end; a screw cap closing and sealing the upper end of the receptacle; a pipe secured to the screw cap; a cock for controlling the flow of gas through said pipe; a straight pipe adapted to extend through a barrel head; a fitting for connecting the upper end of said straight pipe, outside the barrel, with the pipe, which is secured to the screw cap; and a discharge pipe also connected to the fitting.

1,946,994. CAR COOLER. Benjamin A. Waderlow, Flint, Mich., assignor to General Motors Corp., Detroit, Mich., a corpor-

ation of Delaware. Application Sept. 21, 1931. Serial No. 634,109. 3 Claims. (Cl. 257-7.)

1. In a motor vehicle, the combination with an engine having a liquid cooling system and an enclosed body, of a casing



1,946,994

located within the body and provided with air entrance and discharge openings communicating with the interior of the body, a fan at the air entrance opening for recirculating air from within the body through said casing, a heat exchanger between the fan and said discharge opening, inlet and outlet connections between said heat exchanger and the engine cooling system, and a tray adapted to receive a supply of dry ice and position the same within the casing and in the path of the air current produced by the fan.

1,947,016. COMPRESSION UNIT. Edward B. Mallory, Tenafly, N. J., assignor, by mesne assignments, to Lipman Patents Corp., Chicago, Ill., a corporation of Delaware. Application June 27, 1929. Serial No. 374,015. 4 Claims. (Cl. 230-207.)

2. A refrigerating machine comprising, a closed container, a compressor in said container having a shaft and having a discharge port extending axially through said shaft, said discharge port discharging into said closed container from the end of said shaft at a point eccentric to the center of said shaft and serving as an oil separator.

1,947,082. REFRIGERATION MECHANISM. Alfred B. Haselacher, San Francisco, Calif. Application Nov. 2, 1931. Serial No. 572,457. 7 Claims. (Cl. 62-169.1.)

1. A refrigeration mechanism comprising a frame, means for suspending said frame, a pair of plates mounted on said frame, a collar clamped between said plates, and a container mounted on said collar.

1,947,095. APPARATUS FOR PURGING REFRIGERATING SYSTEMS. Edward B. McCabe, Carbondale, Pa., assignor to Carbondale Machine Co., Carbondale, Pa., a corporation of Pennsylvania. Application Aug. 11, 1932. Serial No. 628,303. 5 Claims. (Cl. 62-115.)

1. A refrigerating apparatus including a condenser, a main receiver for the liquefied refrigerant, an auxiliary receiver, a pipe connection between the lower part of said main receiver and the lower part of said auxiliary receiver for delivering all of the liquid refrigerant to said auxiliary receiver, a main liquid delivery conduit from the lower part of said auxiliary receiver, and a gas vent valve connected to the upper part of said auxiliary receiver.

1,947,223. REFRIGERATING ROOMS AND BUILDINGS. Fred Ophuls, Brooklyn, N. Y. Application, Jan. 6, 1930. Serial No. 418,728. 20 Claims. (Cl. 62-171.)

1. The method of preserving the wall structure of refrigerated spaces against the effects of moisture, which consists in maintaining an average air pressure in such space higher than the average external air passage, and sufficiently high to prevent intrusion of water vapor into the wall structure, from outside the space, to a point within the wall structure where the vapor can condense.

1,947,381. REFRIGERATION PROCESS AND ADSORBENTS THEREFOR. Gerald C. Connolly and Ernest B. Miller, Baltimore, Md., assignor, by mesne assignments, to Chester F. Hockley, receiver for The Silica Gel Corp., Baltimore, Md., a corporation of Maryland. No drawing. Application Dec. 6, 1930. Serial No. 500,666. 24 Claims. (Cl. 62-179.)

1. A method of refrigeration consisting in evaporating liquid amo and adsorbing the gaseous amo, in the substantial absence of permanent gases, in a sorbent consisting of a gel impregnated with a substance capable of combining with said amo to form an amo compound.

**Youngholm Vice President
Of Westinghouse Lamp Co.**

EAST PITTSBURGH, Pa.—D. S. Youngholm has been elected vice president of the Westinghouse Lamp Co., according to a recent announcement by Walter Cary, president.

Metal Spray Used To Reclaim Parts

DETROIT—Applicable for use in reclamation of refrigerator motor shafts and evaporators which have become too badly worn for use is the metal spray process developed by C. E. Phillips & Co. here.

In employing this process, says C. E. Phillips, president, the worn parts are revolved as the spray metal is applied; thus insuring a uniform coating. After spraying, the shafts can be ground to correct size, thus obtaining a part similar to a new one.

In this work, the spraying device is held in the hand. Wire is melted in the sprayer, the molten metal becomes volatilized and is then shot out on the parts being rebuilt. During the spraying process, the latter are revolved on a lathe to insure even coverage of the volatile metal.

Mr. Phillips believes that this equipment for spraying worn parts could be used profitably in manufacturers' service departments and in large independent service organizations, where a number of parts could be treated at one time. Cost of operation would be too high for an organization reclaiming a single part at a time, however.

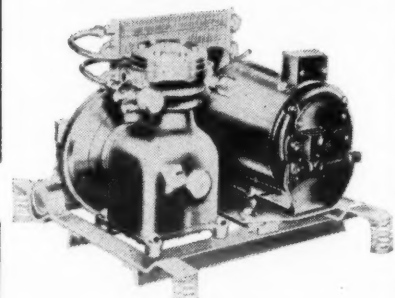
Alter Organizes Firm To Sell Parts

CHICAGO—Organized to do wholesale business in refrigeration and radio parts and supplies and electrical appliances is the Harry Alter Supply Co. at 1923 South Michigan Ave. here. The company represents a merger of the Refrigerator Parts Co. and the Peerless Distributing Co.

Irving Alter, formerly head of the Refrigerator Parts Co., is president of the new wholesale organization, and Ben Mostow, who was president of the Peerless concern, is vice president and sales manager.

Harry Alter, who is head of Harry Alter, Inc., Grunow refrigerator distributor in the Chicago area, is chairman of the board of the supply company, but is active in a consulting capacity only.

Kellogg Units



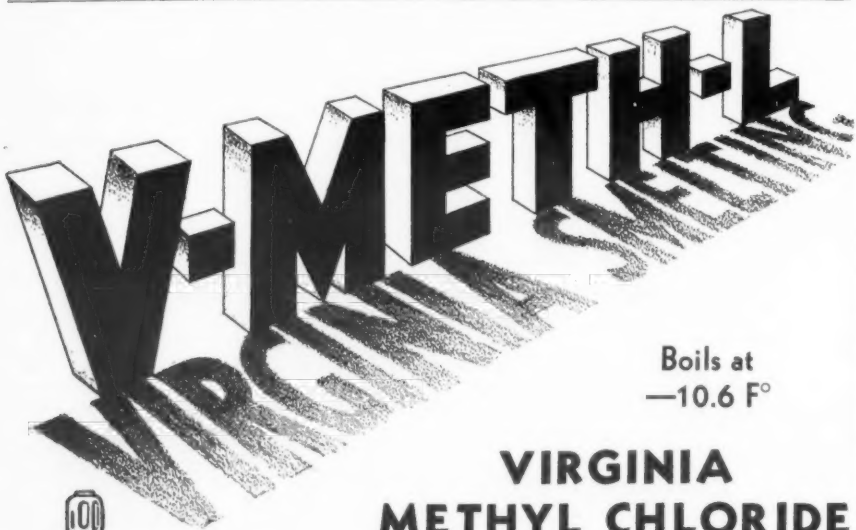
Model 43—122 lbs. I.M.E.

For CH₃Cl and SO₂
Sold Complete or Compressors Only
For Domestic Household Lines
For Electric Water Coolers
Very Quiet and Efficient
Kellogg Units are standard equipment:
Oldest Refrigerator Co. in U. S.
Largest Electric Water Cooler Co. in U. S.
"There is a Reason"

Prompt Delivery
Reasonably Priced

**Kellogg
Manufacturing Company**

Refrigeration Sales Division
239 Broadway
New York City
Factory: Rochester, N. Y.



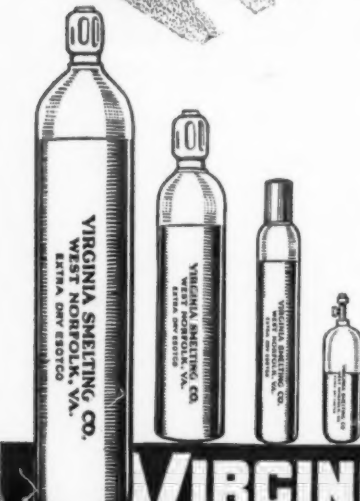
Boils at
-10.6 F°

**VIRGINIA
METHYL CHLORIDE**

**A Pure, Efficient Refrigerant—
by the makers of ESOTOO**

V-Meth-L—Methyl Chloride refined and sold by Virginia Smelting Co. is a product of exceptional purity in which both moisture and acidity is reduced to the minimum. It is ready for direct charging from our "orange cylinders" to your machine. V-Meth-L is shipped in containers holding 1200, 90, 6 and 3½ pounds.

Service Men find our 35 lbs. cylinder both economical and convenient. Available stocks at convenient distributing points everywhere.



**VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA**

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.
Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.
☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide)
☐ Folder: V-METH-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants
Name
Street & No.
City & State



A NEW CORDLEY 3 IN 1 - - - an unbeatable combination cooler!

1. Angle jet bubbler meeting all sanitary requirements.
2. Separate water outlet to fill drinking cups, glasses, etc.
3. Refrigerating compartment big enough to hold 3 milk (quart) bottles or equivalent.

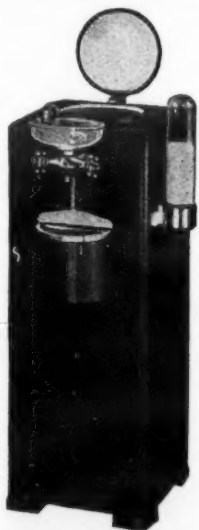
All complete and self contained with high side in a dignified compact cabinet only 15½ inches square by 44 inches high.

Ideal for gasoline filling stations, garages, factories, etc.

Send for complete literature showing all models—bottle and city pressure types.

CORDLEY & HAYES
157 HUDSON ST.
NEW YORK, N. Y.

"water coolers since 1889"



QUESTIONS

Ice Cube Trays

No. 1512 (Distributor, Wisconsin)—“Will you furnish us with the names of manufacturers of ice cube trays of both the metal grid type and the rubber grid type?”

Answer—For a complete list of ice

tray manufacturers, see the forthcoming edition of the 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK. Following are some of the leading makers of metal ice trays: Aluminum Goods Mfg. Co., Manitowish, Wis. Aluminum Co. of America, 2400 Oliver Bldg., Pittsburgh, Pa. Hoosier Lamp & Stamping Co., 1511 Read St., Evansville, Ind. Lima Sheet Metal Products Co., Lima, Ohio. McCord Radiator & Mfg. Co., 2857 E. Grand Blvd., Detroit, Mich. For rubber ice cube trays: Inland Mfg. Co., 15 Coleman Ave., Dayton, O.

Cooling Towers
No. 1513 (Distributor, Missouri)—“Please give us names and addresses of some manufacturers from which we can obtain prices and information on water cooling towers for commercial refrigeration systems.”

Answer:
Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill.
Edwin Burhorn Co., West Fifth St., Bayonne, N. J.
Harry Cooling & Equipment Co., 1649 Broad St., Philadelphia, Pa.
Penn Electric Switch Co., 200 E. Walnut St., Des Moines, Iowa
Strang Air Conditioning Corp., Commerce Bldg., Kansas City, Mo.

Methyl Chloride Commercial Systems
No. 1514 (Manufacturer, Connecticut)—“Can you inform us what companies manufacture refrigeration compressors using methyl chloride? We are manufacturers of ice cream machines, and will be in the market for a good many.”

Answer—Listed below are some of the leading manufacturers of methyl chloride commercial machines. For a more complete list, see the new 1934 REFRIGERATION DIRECTORY which will be out in March.

Baker Ice Machine Co., Inc., 1522 Evans St., Omaha, Neb.
Brunner Mfg. Co., Utica, N. Y.
Copeland Refrigeration Corp., 322 Cass Ave., Mt. Clemens, Mich.
General Refrigeration Sales Co., Beloit, Wis.
Kelvinator Sales Corp., 14250 Plymouth Road, Detroit, Mich.
Merchant & Evans Co., 21st & Washington Ave., Philadelphia, Pa.
Serval Sales, Inc., 119 N. Morton St., Evansville, Ind.
Universal Cooler Corp., 7424 Melville Ave., Detroit, Mich.
Williams Oil-O-Matic Heating Corp., Bloomington, Ill.

Replacement Parts in the Southwest

No. 1515 (Distributor, Arizona)—“We realize the good work that your publication has done in fostering the development of the refrigeration industry, and are wondering if you know where dealers in the small communities, remotely situated from the metropolitan area, can purchase repair parts for various makes of small commercial units.”

“We find that it is almost a necessity to know where various parts for different makes of refrigerators can be obtained, and feel sure that there must be someone making a specialty of supplying these parts. If you are familiar with concerns of this nature in this part of the country, we will appreciate their names and addresses.”

Answer—Yes, a good many companies all over the country have been organized to specialize in the supply of replacement parts. Nearest one to you is probably Refrigeration Service, Inc., 3109 Beverly Blvd., Los Angeles, Calif.

Comparative Data

No. 1516 (Dealer, Arkansas)—“If you have made any comparative tests on new 1934 lines of electric refrigerators and prepared the data into a booklet, please advise us the price of same so we can remit for it. If it is not yet ready, please advise when it will be.”

Answer—Comparative tests of electric refrigerators have never been made by the News due to the high cost of establishing a well-equipped laboratory for that purpose, and the difficulty of operating it without bias. A number of commercial testing laboratories have conducted tests for individual manufacturers or associations, but ordinarily the results of such tests are not made available to anybody except the organization for which they are conducted.

For purely descriptive information about the various new lines of household electric refrigerators, we refer you to the next (March 7) issue of the News. This will be our annual “New Equipment” or “Exhibition Number” and will contain descriptions and photographs of the various 1934 refrigerators, with emphasis on new selling features.

Or, if you are looking for details of materials and construction of the various household refrigerators, watch for the March 21 issue in which specifications of all prominent makes will be published. This includes data on sizes, capacities, materials, etc. in the different models. The specifications will also be included for handy reference in the forthcoming 1934 REFRIGERATION DIRECTORY.

Coin Meters

No. 1517 (Distributor, New Jersey)—“Some of our dealers are interested in making connections with meter device manufacturers so they can sell refrigerators on the meter plan. Will you be good enough to send us the names of manufacturers of this equipment, so that we can negotiate with them?”

Answer—The 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK will list the following manufacturers of coin meters:

General Electric Co., Industrial Dept., Schenectady, N. Y.
International Register Co., 15 S. Throop St., Chicago, Ill.
Landis & Gyr, Inc., 104 Fifth Ave., New York, N. Y.
Mills Novelty Co., 4100 Fullerton Ave., Chicago, Ill.
J. P. Seeburg Corp., 1510 State St., Chicago, Ill.
Shay Co., 616 S. Michigan Ave., Chicago, Ill.

Zell Products Corp., 536 Broadway, New York, N. Y.

List of Manufacturers

No. 1518 (Distributor, Rhode Island)—“We would appreciate it very much if you would refer us to a complete list of companies manufacturing electric refrigerators.”

Answer—For the complete list, see the REFRIGERATION DIRECTORY AND MARKET DATA BOOK. The last-published edition (as of 1932) is available at \$1 per copy; or you may prefer to wait a month and get an up-to-date list in the new 1934 edition (price \$3 per copy).

Solid CO₂ Refrigerators

No. 1519 (Utility company, District of Columbia)—“We have a request for information on non-automatic refrigerators or cabinets using dry ice as a refrigerant. We will appreciate it if you will send us the names of manufacturers producing such equipment.”

Answer—There has been very little commercial development in household refrigerators using solid CO₂ as refrigerant. The subject has been thoroughly discussed and studied by refrigerating engineers, but apparently their developments have not progressed to the point where commercial production is yet practical.

One of the most active companies in the field last year was the International Carbonic Engineering Co., Kennett Square, Pa. And for a while last year the Fleetwood Body Co., Fleetwood, Pa., built household refrigerators for solid CO₂ under International Carbonic patents.

No. 1520 (Service company, West Virginia)—“Do you know where we can buy some second-hand ice cream cabinets?”

Answer—We have no list of supplies at present, but will gladly forward names of anyone with a stock of them.

EARNINGS

Commercial Investment Trust

NEW YORK CITY—With its volume of business and earnings for common stock exceeding those of any year since 1929, Commercial Investment Trust Corp. reports for 1933 consolidated net profits available for dividends of \$7,474,394 compared with \$5,719,775 in 1932.

After dividends on the first preferred stocks to the date of their retirement, April 1, 1933, and on the convertible preference stock for the year, earnings available for dividends on the common stock were \$6,488,995, equivalent to \$3.42 per share on the average number of shares outstanding in the hands of the public during the year.

This compares with \$4,117,827, equivalent to \$2.04 per share on the average number similarly outstanding during 1932.

Net profits of \$847,506 were realized from the sale of foreign investments, but were not included in net income for the year. Together with certain similar items prior to 1933 not included in profits, they have resulted in an addition of \$897,586 to surplus.

Eureka Vacuum Cleaner

DETROIT—Net profits of the Eureka Vacuum Cleaner Co. for 1933 were \$99,035.64, after all charges and reserve allowance of \$38,630.82 for possible loss in closed banks, according to the annual report made to stockholders last week by Fred Wardell, president. This compares with a net of \$48,110.29 in 1932.

The balance sheet of the company at the close of the year showed working capital of \$1,847,514.78. Cash and marketable securities aggregate \$1,276,763.42, while all liabilities are listed at \$70,388.59.

“Sales for the year amounted to \$1,537,590.44, an increase of 13% over the preceding year,” Mr. Wardell said. “One-third of the operating profits for the whole year,” Mr. Wardell said, “were made in December, and 60% of the 1933 profit was earned in the last quarter of the year. This upswing continued throughout January, 1934.”

E. I. Du Pont de Nemours

WILMINGTON, Del.—Net profit of \$32,921,253, equivalent to \$3 per share on common stock, was reported last week by E. I. Du Pont de Nemours & Co. on its 1933 operations. This compares with a profit of \$19,769,394, or \$1.82 a share, in 1932.

Du Pont's income from operations in '33 netted \$24,358,201, as compared with \$10,354,134 in 1932, while income from investments totaled \$18,065,483, compared with \$16,948,295. Dollar sales for the year increased 24%.

At the close of the year, current assets were \$129,771,061, and current liabilities totaled \$16,601,263. Cash on hand amounted to \$18,838,583, and marketable securities were placed at \$58,010,388, of which \$53,399,000 was in government bonds. Total assets were \$605,631,064.

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: Fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccafee Bldg., Detroit, Mich.

EQUIPMENT WANTED

WANTED TO BUY new and used 1930, 1931, 1932, 1933 electric refrigerators in Frigidaires, Kelvinators, General Electrics, Westinghouses, Crosleys, and Norges. Will pay cash. Can use up to a carload. Gas & Electric Equipment Co., Donaghey Bldg., Little Rock, Ark.

MISCELLANEOUS

COMPLETE overhaul service of all Frigidaire products—float-valves, water-valves, flapper-valves, switches, coils, compressor bodies, complete condensing units, electric motors repaired and rewound. “Gates” belts, “Ansul” Sulphur Dioxide, “Reserco” oil. Lowest prices. Workmanship and materials fully guaranteed. A trial will convince you. Refrigeration Service Corporation, 2823 N. 23rd St., Milwaukee, Wis.

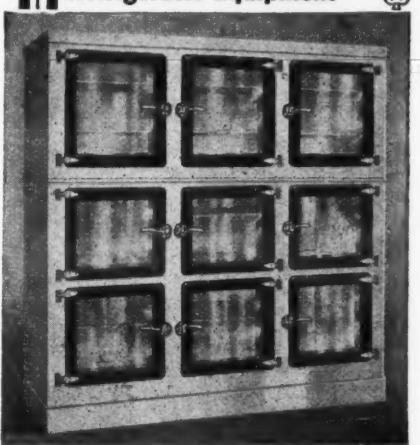
INDEPENDENT SERVICE COMPANIES

HALECTRIC Thermostat repair service. Ranco, B & B, Two dollars each, one year guarantee, prompt service. Halectric Laboratory, 1793 Lakeview Road, Cleveland, Ohio.

COMPLETE repair service on evaporators, float valves, compressors and other parts. Small compressor seal repairs, \$2.50 to \$4. Float valve repairs and calibration, \$2.00. Other repair and parts prices on request. Forty-eight hour service. Material and workmanship guaranteed for one year. Refrigeration Maintenance Corp., 365 East Illinois Street, Chicago, Illinois.

IF YOU HAVE surplus stock on hand, an advertisement in this column will bring it to the attention of buyers who are looking for job lots of equipment. See top of column for rates.

ACE HARD RUBBER Refrigerator Equipment



Doors, door frames, slide rails, jambs, trim, glazing strips, etc. Standard and special sizes available. Catalogue and prices on request. AMERICAN HARD RUBBER COMPANY, 11 MERCER STREET, NEW YORK, N. Y. Akron, Ohio—111 W. Washington St., Chicago, Ill.

McCORD REFRIGERATION PRODUCTS

COMMERCIAL EVAPORATORS

DOMESTIC EVAPORATORS

CONDENSERS

METFLEX ICE TRAYS

SPIRAL FINNED TUBING

SPIRAL COPPER FINNED IRON

STEEL OR COPPER PIPE

McCORD RADIATOR & MFG. CO. DETROIT, MICH.

COMING!!!

The PEERLESS “GOLD-SEAL LOWSIDE”

The most striking development in commercial refrigeration of the past DECADE

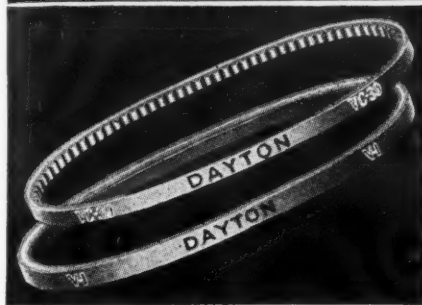
For the first time—Efficiency and “Eye-Appeal” combined to produce a new standard of refrigeration for the preservation of meats and vegetables

Peerless Ice Machine Company

515 West 35th St.

Chicago, Ill.

DAYTON V-BELTS



● There is a Dayton V-Belt for all makes and types of refrigerators. A stock is available near you. Send for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO. DAYTON, OHIO
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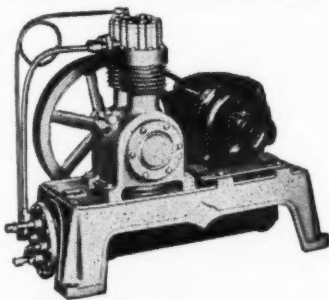
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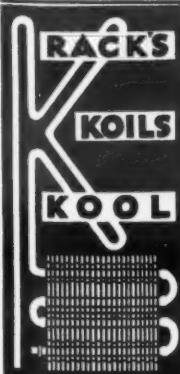
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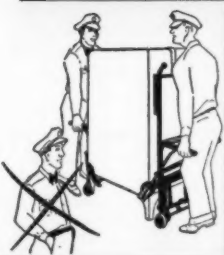
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